

Xflo™ Fuel Meter

White Paper

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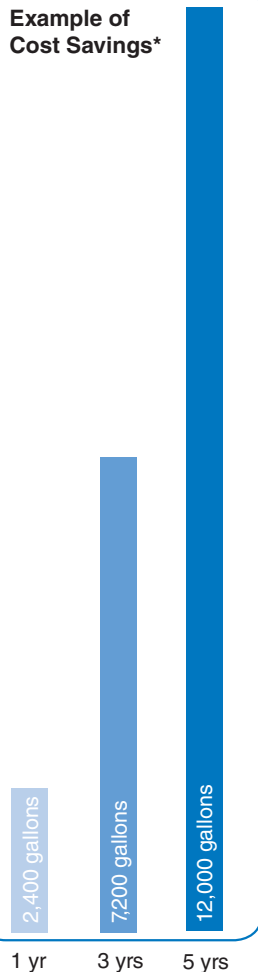


Stop Fuel Loss and Increase Revenue

The Dresser Wayne Xflo Fuel Meter saves fuel retailers tens of thousands of dollars in fuel lost to meter drift. Building on Dresser Wayne's previous metering technology, it is the most accurate fuel meter ever developed.

- Less meter drift increases retailer profitability by saving up to 2,400 gallons of lost fuel per year
- Reduces ownership and maintenance costs because it needs virtually no recalibration
- Efficient hydraulic design increases flow rates for faster customer fueling
- Compatible with a variety of alternative fuels
- Based on proven, tested technology

Example of Cost Savings*



Dresser Wayne Xflo Fuel Meter saves Fuel and Money

Fuel retailers have long struggled with the issue of fuel meter inaccuracy as the components and sealing surfaces on typical piston meters wear over time. The result is meter drift, and it costs retailers thousands of gallons of fuel per year at each dispenser as it is given away a little at a time to refueling customers. What's more, slow flow rates can create lines in your forecourt which can cause drivers to go to a competitor. Another issue is maintenance and ownership costs are higher than necessary because of inefficient design and the need for frequent recalibration.

Dresser Wayne's newly-developed positive displacement Xflo™ Fuel Meter sets a new industry benchmark in metering technology. It is designed to address traditional piston meter challenges such as lost fuel caused by meter drift, slow flow rates and high maintenance costs. The Xflo Meter improves upon Dresser Wayne's already popular iMeter positive displacement fuel meter through advances in several areas of pump and dispenser hydraulics including accuracy, calibration, flow rate performance and packaging. In fact, the Xflo Meter can save potentially 12,000 gallons of fuel over five years.*

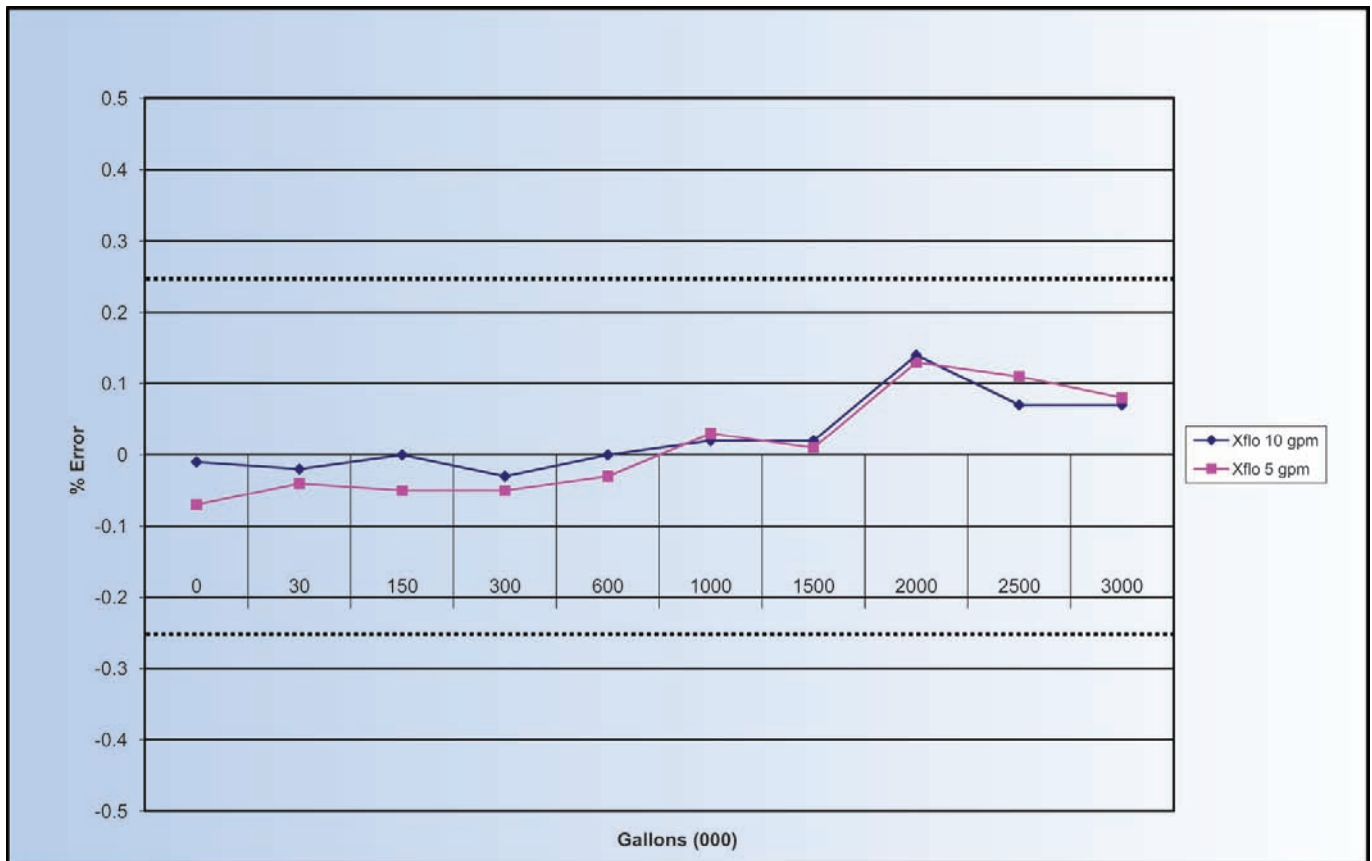
* Assumes five dispensers per site dispensing 200,000 gallons per month and a 0.1% accuracy improvement.

Unparalleled Accuracy and Stability

Continuing Dresser Wayne's technology leadership, the Xflo Meter expands on iMeter's proven features to deliver even more tangible benefits for fuel retailers. Without question, the Xflo Meter is the most accurate meter ever developed by Dresser Wayne — or quite possibly by anyone in the industry.

The Xflo Meter's axial flow architecture represents an evolutionary step in metering technology. Its high precision dual spindle design minimizes contact between the flutes and the sealing surfaces. This decreases the subsequent friction that causes typical positive displacement meters to develop wear patterns. The innovative design eliminates the inherent tendency of most positive displacement meters to "over-deliver", in effect give away, fuel. Thanks to its highly engineered spindles made of hardened bearing steel, the Xflo Meter offers accuracy never before experienced on the forecourt for significant fuel savings.

While Dresser Wayne has performed our own internal tests, we engaged a third party lab, SP Technical Research Institute of Sweden, an international leader in technology research and certification, to test the accuracy of the design. SP's findings confirm what our internal results have shown, that the Xflo Meter's accuracy remains consistent after measuring fuel volumes as high as three million gallons at varying flow rates.



3 million gallon accuracy verification

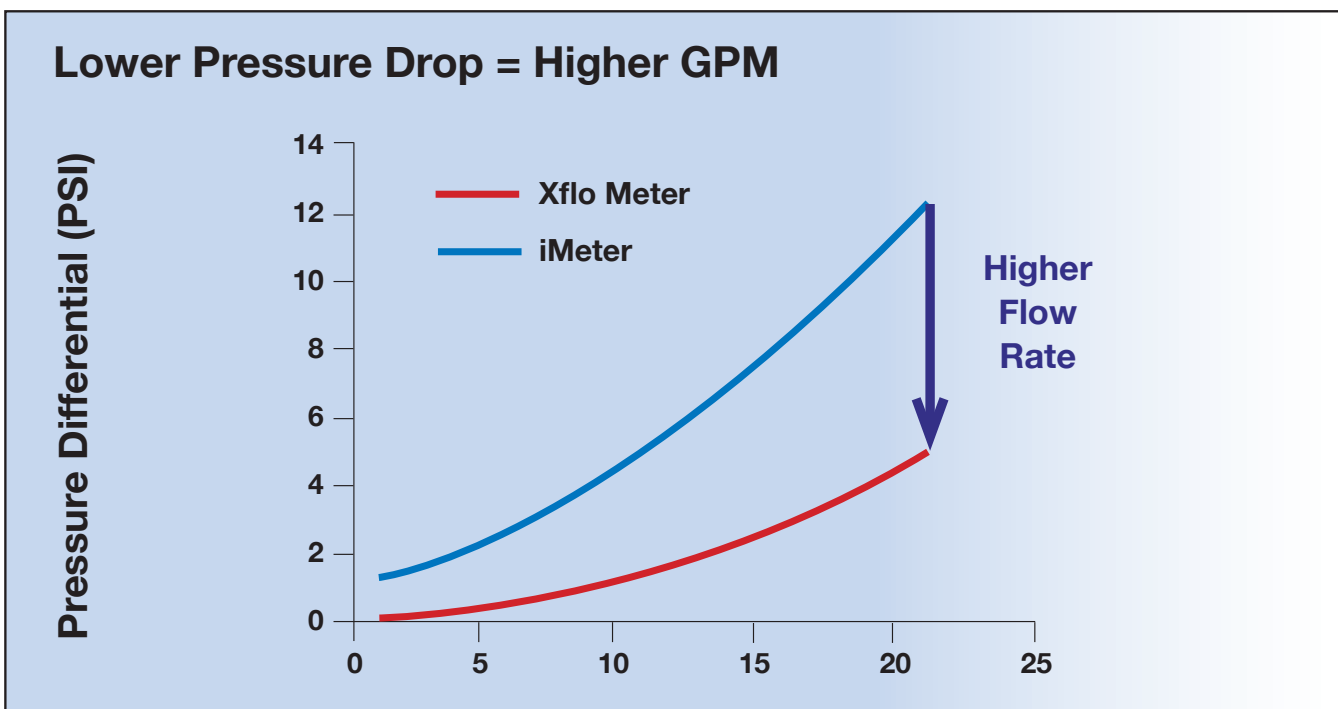
No Recalibration and Low Maintenance Costs

The unique technological advancement of the Xflo Meter module is the meter’s ability to maintain accuracy throughout its service life. This improvement is achieved by reducing the number of sealing surfaces in the measuring chamber that are inherently prone to wear in traditional positive displacement meters. As a result, the Xflo Meter rarely — if ever — needs to be recalibrated, offering true, consistent measurements over the life of the product.

Another key feature that separates the Xflo Meter from its positive displacement predecessors is that each device has a unique calibration identity linked to the accuracy profile of a specific meter. Instead of using generic calibration parameters to adjust a typical accuracy profile up or down to a single point on a calibration curve, each Xflo Meter leaves the factory “tuned” to its own performance profile using a dozen data points across a wide band of flow rates. These curves are stored on the electronics of the XWIP pulser assembly and uploaded to the iGEM dispenser computer for backup storage in the event that components need to be replaced or serviced.

Faster Throughput

Not only does the Xflo Meter offer premium measurement accuracy, it does so with a far less restrictive design than any other meter. Its axial flow design with dual spindles and a higher capacity 25 gpm filter creates a more direct flow path. The result is a nearly 30 percent reduction in pressure loss meaning the meter is no longer the “bottleneck” in the hydraulic pathway. It offers faster flow rates so retailers can move more customers through the forecourt in a shorter amount of time. By delivering a faster fueling experience, retailers have a larger window of opportunity to promote high margin sales to busy customers who may have only a few minutes to spare. It also encourages customer loyalty. These are obvious benefits for traditional retail applications, but it also has strong future potential for high capacity dispensers used in truck stop environments.



Alternative Fuels

Furthermore, the Xflo Meter is capable of handling a wide range of flow conditions, fluid temperatures, densities and viscosities making it suitable for use with any quality of fuel. It can also be configured for use with alternative fuels. The alternative fuel version of the Xflo Meter is built on the same platform with the same design as the version for traditional fuels. Installing the alternative fuel configuration provides the unlimited flexibility to dispense multiple fuel types or to add alternative fuels to your product offerings later.

Easy Installation and Risk-Free Ownership

The Xflo Meter is designed for easy installation and ownership. Like Dresser Wayne's popular iMeter, which offers two meters in a single package, the Xflo Meter features twin spindles in a common housing. The result is a compact, modular product that provides flexible layout configurability while allowing easier assembly, service or retrofit.

Retailers can install the Dresser Wayne Xflo Meter option on their dispensers with confidence in Dresser Wayne's proven experience. With thousands of meters successfully deployed, Dresser Wayne has the expertise to successfully implement Xflo Meters into your environment. The Xflo Meter has also undergone extensive lab testing. More than 12 million gallons of fuel have been pumped through the meter with no meter drift in internal lab tests, and third party results have confirmed the meter's accuracy to three million gallons.

The axial flow design of the Xflo Meter is not a new concept to retail petroleum, nor does it represent risky or unproven technology. Dresser Wayne has simply used its technical experience and expertise to fine-tune the application for use in rigorous field conditions.

Familiar Functionality and Legacy Investment Protection

The Xflo Meter retains many of the same proven features valued by Dresser Wayne iMeter users. It still employs reliable Hall effect technology to communicate measurement “pulse” data to magnetic sensors on the XWIP. Technicians and sealers installing the Xflo Meter and performing the initial calibration will notice little difference between the operation of the WIP for the iMeter and that of the XWIP for the Xflo Meter. The pulser housings not only look the same, they also function in the same manner, setting the meter through the opening and closing of the calibration door.



The Xflo Meter is also built on the same hydraulic footprint common to the iMeter with identical meter inlet and outlet connections. Designing the new meter for backwards compatibility helps preserve customers' existing investment by allowing new meter technology upgrades on legacy dispensers. The Xflo Meter can be retrofitted to any Dresser Wayne-manufactured dispenser that contains an iGEM pump computer and iMeter hydraulics. It is also compatible with Dresser Wayne's iX™ Technology Platform, a single technology foundation that provides the scalability to add functionality through easy-to-integrate modules such as the Fusion™ Universal Site Controller™, iX Pay secure payment, iSense™ remote monitoring, iDPOS™ in-dispenser POS and iX Media digital merchandising.

The Xflo Meter's more compact design also creates additional space in the hydraulic area for improved installation and service access. This allows Ovation dispensers to be supplied with self-contained suction pumps, a feature not possible for dispensers utilizing the iMeter design.

Growing Accessibility

Jointly developed by Dresser Wayne engineers in the U.S. and Europe, the Xflo Meter is truly a global product. The company plans to eventually make it the basic platform for all Dresser Wayne fuel dispensers worldwide. The Xflo Meter is currently offered as an optional feature upgrade on Dresser Wayne's Ovation® and Vista™ fuel dispensers in North America, European-manufactured Star™ and Global Ovation dispensers and rest-of-world Vista fuel dispensers. The Dresser Wayne Xflo Meter is also compatible with a number of alternative fuel types so it will be available on Dresser Wayne global alternative fuel dispenser platforms.

Better Design, Better Business

Through cutting-edge advances built upon Dresser Wayne's technology leadership, the Xflo Meter delivers unparalleled precision and efficiency. Fuel retailers can accurately sell their inventories without giving away uncalculated fuel which adds up to significant savings over time, especially for large volume retailers.

The Xflo Meter's axial flow design with dual spindles made of hardened bearing steel offers efficient fuel throughput with less wear saving retailers thousands of dollars. Its exceptional accuracy practically eliminates recalibration costs. Additionally, higher flow rates mean more satisfied, loyal customers can move through retailers' forecourt environments.

Putting It All Together

The Xflo Meter can be added as an option to the following Dresser Wayne fuel dispenser models:

North America

Ovation

Ovation iX

Vista (Mexico)

Europe

Star

Global Ovation

Non-Europe and

North America Locations

Vista

Vision

The Dresser Wayne Xflo Meter is also backwards compatible with all dispensers that include the iGEM electronics module.

Traditional Piston Meters		Xflo Meter	
Feature	Effect	Feature	Effect
Degradation of sealing surfaces prone to wear with mechanical devices	Fuel losses equal to profit loss in a market with decreasing margins	No touching or wearing parts means minimal meter drift	Minimized fuel losses
Seals require initial break-in			No need for field calibrations
Single point electronic calibration			Reduce service cost & downtime of equipment of the forecourt
Meter pressure drop	Inherent flow rate limitation by design	Lower pressure drop	Reduced issues with fuel stock discrepancies
	Accuracy difference across flow rates (extreme low and high flows)	Multipoint electronic calibration	No difference in accuracy across flow rates regardless of nozzle open/close position
			Enables higher flow performance with a more efficient hydraulic design

Xflo Meter Frequently Asked Questions

Why change the industry's leading meter technology after years of successful use?

Although Dresser Wayne's iMeter has long been recognized as one of the most accurate meters in the industry, the company's philosophy has always been to stay at the cutting edge of technological innovation in order to provide maximum value to its customers. The Xflo Meter offers significant, tangible benefits for fuel retailers: the virtual elimination of meter drift and its resulting fuel loss and a higher flow rate.

Is the Xflo Meter really more accurate than traditional meters?

Yes. Traditional positive displacement meters have served the industry well and will continue to do so in the future. But the Xflo Meter addresses a performance issue inherent to all such legacy meter technology by reducing the amount of contact (and subsequent friction-caused wear) between sealing surfaces. The high precision spindle design ensures minimal contact between the flutes allowing the Xflo Meter to measure literally millions of gallons of fuel without appreciable drift.

How does this new design affect flow rate?

Spindle-type meters require less pressure to move a given volume of fluid through the device than a comparable piston design. This fact, combined with a more direct flow path and a higher capacity 25 gpm filter, results in the most efficient fluid pathway ever designed for a Dresser Wayne dispenser. The end result? Measurably higher flow rates that speed the fueling process and increase customer throughput.

How does the calibration work?

Although calibration will likely be unnecessary under normal usage conditions, the Xflo Meter utilizes the same simple, single-step process as Dresser Wayne's iMeter: the calibration door is opened, the five-gallon test measure is filled to the zero mark, and the calibration door is subsequently replaced. Fast, easy and effective!

The only difference between calibrating the iMeter and the Xflo Meter is that a calibration number unique to each Xflo Meter (recorded on the side of the unit) must be entered electronically so it can be stored for reference to the individual meter.

Is the Xflo Meter compatible with alternative fuels?

Yes. The Xflo Meter's design is well suited for use with a variety of alternative fuels. The core elements of the meter assembly — cast iron housing and hardened steel spindles — are inherently compatible with alternative fuels. In fact, Dresser Wayne plans to use the Xflo Meter as the future metering platform for its alternative fuels product line.

How do you physically seal the Xflo Meter?

Each calibration door on the XWIP is sealed just like the doors on the iMeter. A seal wire passes through an opening in the door and through a flange on the meter assembly, which can then be sealed by an authorized representative.

Will all Dresser Wayne dispensers be supplied with Xflo Meters as standard equipment?

No. Most dispenser models continue to feature Dresser Wayne's iMeter as standard equipment. The Xflo Meter is an optional upgrade to Dresser Wayne's Ovation and Vista dispensers and its European-built Star dispenser (the European-built Global Ovation dispenser can only be equipped with the Xflo Meter). Dresser Wayne is also exploring the possibility of integrating the Xflo Meter into other products.

How do I know that this meter is more accurate?

In both extensive laboratory and field tests, the Xflo Meter has performed exceptionally well, measuring millions of gallons of fuel without appreciable meter drift. Dresser Wayne even engaged a third party industry expert to review the design; the findings confirmed the new meter's improved accuracy. The Xflo Meter is, quite simply, the most stable meter ever developed.

Is there a warranty for recalibration?

Dresser Wayne offers a four-year warranty for any necessary recalibration of the meter.

Are the flow control valves affected by this design?

No; the Xflo Meter uses the same proportional flow control valves as the iMeter.

Will single-sided units be available with the Xflo Meter?

At this time, Dresser Wayne does not plan to develop single-sided models with the Xflo Meter because of low market demand.

What other options are available with the Xflo Meter?

Dresser Wayne plans to offer a suction option for meters installed in the Ovation dispenser.

About Dresser Wayne

With offices on five continents, manufacturing facilities on four, and thousands of employees worldwide, Dresser Wayne has shaped the retail and fleet fueling industry ever since its modest beginnings in 1891. Known for combining cutting-edge technology with exceptional customer focus and win-win industry partnerships, Dresser Wayne has become the leading supplier of integrated solutions to its customers in the retail and fleet petroleum industry. Dresser Wayne—headquartered in Austin, Texas—is largely responsible for the innovations that contribute to the look and functionality of the modern service station. From dispensers and POS systems to retail intelligence and after-sale support services, Dresser Wayne is committed to continuing its long tradition of providing innovative, customer-centric solutions in all facets of the industry. Dresser Wayne is a business segment of Dresser, Inc.

About Dresser, Inc.

Dresser, Inc. is a leader in providing highly engineered infrastructure products for the global energy industry. The company has leading positions in a broad portfolio of products including valves, actuators, meters, switches, regulators, piping products, natural gas-fueled engines, retail fuel dispensers and associated retail point of sale systems and air and gas handling equipment. Leading brand names within the Dresser portfolio include Dresser Wayne® retail fueling systems, Waukesha® natural gas-fired engines, Masoneilan® control valves, Mooney® regulators, Consolidated® pressure relief valves, and Roots® blowers and rotary gas meters. It has manufacturing and customer service facilities located strategically worldwide and a sales presence in more than 100 countries. The company's website can be accessed at www.dresser.com.



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