

Optical Encoder with Touch Coupler

Positive Displacement Cold Water Meters

5/8" (DN 15mm), 3/4" (DN 20mm), 1" (DN 25mm)



**Approved Encoder &
Compatible Touch Coupler**

*Not affiliated with Sensus



**Available with Single Check for
backflow prevention.**

Applications - RG3 Perpetual PD Meters with Sensus approved Optical encoder and Sensus compatible touch coupler integrate seamlessly with the FlexNet® communication network.

Lead Times - For faster delivery, meters are manufactured, assembled, and tested in the USA.



The Story

RG3 positive displacement meters have used an SR® II style oscillating piston chamber since the patent ran out on the design. While we have enough respect for the SR® II measuring chamber to copy it, the SR® II style chamber will start to lose low flow due to scaring on the piston and cylinder wall even in pristine water. An SR® II with 1.5 million gallons of use will typically test almost perfect on high and medium flow with low flow in the early 90% range. Many customers get 25 years of faithful use out of these meters, but nobody wants to lose low flow in the process.

The low flow drop comes from the piston rubbing against the cylinder wall as it moves around the chamber. The piston is designed to be lubricated by the water and never touch the cylinder wall, but unless the bolts are perfectly tightened at exactly the same time and stay in exactly the same place, the force from the bolts pushes the bottom plate into the chamber which bends the chamber wall just enough to cause the piston to rub. The rubbing wears away at the piston and cylinder wall until a micro water bypass has been created reducing low flow over time.

Tightening or loosening bolts on any meter will greatly affect its accuracy. When torquing the bolts to secure the bottom plate, every meter has a sweet spot that will provide the best test results but with temperature changes and time, bolts tend to back off or tighten up at uneven rates. The only reason that torquing a bolt down more could change the meter's accuracy is because the bolts compress the bottom plate and the bottom plate then compresses the measuring element (chamber). Bending the meter chamber causes the cylinder wall to slightly push into the piston causing the rub. The only way to solve the wear problem caused by tightening the bolts is to remove them from the design and make sure the chamber is compressed exactly the same all the way around with 360° of even compression at the perfect amount of force so you always stay in the accuracy sweet spot.

That is how the Perpetual meter came into existence. The patented brass main case design applies 360 degrees of uniform compression loading on the SR® II style oscillating piston measuring chamber. The chamber is cradled in 100% silicone on top and bottom to prevent the bottom plate from pushing the cylinder walls into the piston when the meter is assembled. The design doesn't allow the piston to touch the cylinder wall which prevents wear spots from being created. We also added an oversized 100% silicone outlet gasket to create a superior seal against the machined brass body to ensure no bypass occurs. We use 100% silicone because it doesn't break down and crack like the nitrile rubber other manufacturers use when exposed to water additives like chloramine for years.

The Perpetual PD design reduces drag and wear which improves long term low flow accuracy and increases longevity. That is why Perpetual PD meters have twice the new meter accuracy warranty of any other mechanical meter.



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**or email us at: customerservice@RG3Meter.com
for pricing and availability.**



Perpetual® Low Lead Meters

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Data Sheet



AMR



AMI / AMR



Touch Coupler



Direct Read



Optional Check Valve

Applications - For use in measurement of potable cold water in residential, commercial and industrial services where flow is in one direction only. Also available with Single Check NRV option for back flow prevention.

General- All Perpetual® positive displacement cold water meters (5/8" - 1") conform to American Water Works Association C700 latest revision.

Measuring Chambers - Measuring chambers are made of suitable engineering plastics to meet AWWA C700 standards. The piston has approximately the same specific gravity as water. All of the spindles are stainless steel. The chamber is supported by silicone rubber mounts.

Lead Free Main Case - Main cases are made of Bismuth BiAlloy CDA89836 or EnviroBrass™ II C89520 and are in compliance with NSF / ANSI 61 standards and the Safe Drinking Water Act (NSF 372). The serial number is permanently marked on the body, along with the size, direction of flow and manufacturer (RG3). The retaining ring is made of stainless steel.

Main Case	Lead Free Bronze
Measuring Unit	Thermoplastic
O-Ring	Nitrile Rubber
Magnet	Ceramic Ferrite
Strainer	Thermoplastic

Installation - The meter must be installed in a clean pipeline, free from any foreign materials. The meter should be installed with the direction of flow as indicated by the arrow cast in the meter case. The meter may be installed in horizontal or inclined lines.

Strainers - All meters have a strainer made of a polypropylene plastic. Strainers are located near the inlet port in the main case just before the measuring chamber. The strainer screens are rigid, snug fitting and have an effective straining area of at least double that of the main case inlet. All of the strainers are easily removable and replaceable.

Bottom Plate - All meters have a bottom plate that provides 360 degrees of uniform compression loading on the chamber. The bottom plates are held in place by a stainless steel retaining ring. Brass, Plastic, & Cast Iron options are available.

O-Ring - All meters are sealed with a high pressure O-ring composed of Nitrile Buna.



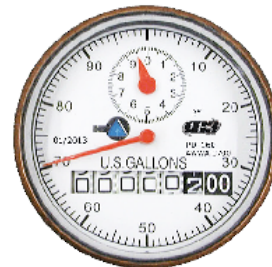
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Direct Read Sealed Registers - These registers are the straight read, magnetic drive, odometer type with a sweep hand and leak detector. Registers are hermetically sealed to prevent fogging. Registers are roll sealed and dry with a 360° test view. All direct reading register cups are made of copper to prevent corrosion and covered with a high-strength, impact-resistant glass lens to prevent breakage. The register housings and lids are made of high strength polymer or copper alloy. All registers are secured to the main case by means of a tamper-proof Torx screw to allow for in line service replacement.

Registers include:

- Company name
- Month and year of manufacture
- Center sweep hand
- Large, easy to read numbers
- Size of meter
- Unit of Measure (Example U.S. Gallons, Cubic Feet, or m3)
- Low flow / leak indicator



Registers include an odometer, which will give the total amount of water flow. One sweep of the hand will be equal to:

5/8" - 1" meters 10 gallons / 1 cu ft

Register Options -

- Direct Read Bronze or Engineered Plastic
- AMR Tesla 4 TR Integrated Transceiver Register
- AMI or AMR Optical Encoder with Tesla Solo or Duo
- AMI or AMR Tomahawk Encoder with Tesla Solo or Duo
- Touch Coupler Optical Encoder with Sensus Compatible Touch Coupler



Magnetic Drive - Meters use high strength magnets to provide positive, reliable and dependable register coupling.

Characteristics- Meets or exceeds latest revision of AWWA C700 Dimensional Standards. Operational temperature range 33°F-80°F.

All Bronze Construction	Optional Check Valve	Direct Read & AMR/AMI Register Options	American Made	Plastic, Bronze, or Cast Iron Bottom Plate	Excellent Start Up & Low Flow Rate	Built-in Strainer
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Tamper-proof Features - Registers shall contain a locking device to prevent theft of water usage. Removing the register requires a special tool.

Maintenance -The measuring chamber assembly can be removed in order to be repaired or replaced.

Warranty - Standard 10 year new meter accuracy warranty and 25 year main case warranty.

* Refer to full warranty for detailed warranty guidelines and standards.



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Tesla 4 TR Integrated
Transceiver Register - AMR



Optical Encoder Register
w / Solo or Duo - AMR/AMI



Perpetual® PD - Bottom
Plastic, Bronze or Cast Iron



Direct Read
Brass or Plastic

Model		PPD 05	PPD 07	PPD 08S	PPD 08L	PPD 10
Size		5/8 x 1/2"	5/8x3/4"	3/4"	3/4"	1"
Start Up (95%)	USGPM	1/8 (.125)	1/8 (.125)	1/4 (.25)	1/4 (.25)	1/2 (.5)
Low Flow (AWWA)	USGPM	1/4 (.25)	1/4 (.25)	1/2 (.5)	1/2 (.5)	3/4 (.75)
Continuous (AWWA)	USGPM	15	15	20	20	25
High Flow	USGPM	20	20	30	30	50
Extreme High Flow (Intermittent)	USGPM	28	28	35	35	65
Max. Pressure Plastic Bottom	P.S.I.	150	150	150	150	150
Max. Pressure Brass Bottom	P.S.I.	150	150	150	150	150
Max. Pressure Cast Iron Bottom	P.S.I.	150	150	150	150	150
Operating temature	Deg. F	33°-80°	33°-80°	33°-80°	33°-80°	33°-80°
Length	Inches	7- 1/2"	7- 1/2"	7- 1/2"	9"	10- 3/4"
Height	inches	4-13/16"	4-13/16"	5- 1/2"	5- 1/2"	6- 7/8"
Weight	Pounds	3.4LBS	3.4LBS	6.4LBS	6.4LBS	11.2LBS
Ends		Threaded	Threaded	Threaded	Threaded	Threaded

* Due to continuous research and product enhancement, RG3 Meter Company reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists.



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