

V100/V110 industrial positive displacement meter

External threaded spuds

V100 low lead bronze

Sizes $\frac{5}{8}$ " x $\frac{1}{2}$ " x $7\frac{1}{2}$ "
& $\frac{5}{8}$ " x $\frac{3}{4}$ " x $7\frac{1}{2}$ "

V110 polymer

Sizes $\frac{5}{8}$ " x $\frac{1}{2}$ " x $4\frac{1}{2}$ "
& $\frac{5}{8}$ " x $\frac{3}{4}$ " x $6\frac{1}{2}$ "

With or without pulse



Size			$\frac{5}{8}$ " x $\frac{1}{2}$ ", $\frac{5}{8}$ " x $\frac{3}{4}$ "
Qmin	Min. flow (gpm)	-5% +1.5%	0.1
Qt	Low flow (gpm)	±1.5%	0.5
Qn	Cont. flow (gpm)	±1.5%	15
Qmax	Peak flow (gpm)	±1.5%	20
Operating pressure (psi)			150
Operating temperature (°F)			120

Register reading smallest quantity - no sweep hand	
US gallons	1
Cubic meters	0.0001
Resolution in liters	0.1

Capacity of register	
US gallons (millions)	100
Cubic meters (thousands)	10

Pulse output		
	V100 (low lead bronze)	V110 (polymer)
USG	1 contact = 0.5 gal	1 contact = 0.5 gal
m ³	1 contact = 0.5 l	1 contact = 0.5 l

Register type Permanently sealed direct reading

Materials

	V100 (NSF approved)	V110
Main case	Low lead	Polymer resin
Measuring chamber	Compounded polymer	Compounded polymer
Division plate	Loaded nylon	Loaded nylon
Piston	High impact polymer	High impact polymer
Thrust bearing insert	Loaded nylon	Loaded nylon
Driving bar	Loaded nylon	Loaded nylon
Strainer	Polypropylene	Polypropylene
Register lens	Tempered glass	Tempered glass

Connection

Meter spud	NPSM	BSP
Connector tailpiece	NPT	BSP ($\frac{1}{2}$ " BSP fits into $\frac{1}{2}$ " FNTP)

Operation

The V100 (formerly PSM190) meter is a positive displacement type meter operating on the oscillating piston principle. This utilizes a piston which the water rotates in a measuring chamber, each piston revolution being equivalent to a known volume of water. The piston movement is transferred by appropriate reduction gearing to a straight reading, sealed totalizer.

Installation

The meter should be installed in a clean pipe line, free from any foreign materials. Install the meter with direction of flow as indicated by the arrows cast in the register case. The meter may be installed in horizontal or vertical lines.

Application

The meter is for use with POTABLE COLD WATER up to 120 °F (50 °C) and working pressures up to 150 psi. The meter will perform with accuracy registration of 100% ±1.5% within the normal flow range. Both pressure loss and accuracy tests are made before shipment. No adjustment need be made before installation. Should further tests be desired, the requirements in Table 5-3 AWWA Manual M6 should be followed.

Construction

The chamber case houses the oscillating piston measuring chamber and a polymer strainer. The measuring chamber is a bottom-in and top-out design and consists of the measuring chamber with division plate and thrust bearing insert, the piston, the chamber cover including the drive bar assembly and a cover locator pin. The register is filled with treated liquid and sealed to prevent fogging or tampering. The polycarbonate register has a magnified lens enlarging the totalizer numbers for easy reading. The meter flow direction arrows are cast on the register case. The unit of measurement is shown on the register lens, except low lead M3, which is marked on the body. A serial number is inscribed on the case of the lens cover, which is hinged toward the outlet end of the meter.

Connections

Bronze meter casing spuds have external straight threads conforming to ANSI B 2.1. Polymer meter casings have BSP threads. Low lead or polymer connectors are available.

How to read V100 Meters

Direct reading V100 totalizers are read exactly as indicated on the number wheels from left to right, similar in fashion to reading the odometer in an automobile. Reading the small horizontal lines (if present) on the first number wheel from the right is omitted, except when comparing water throughput into a calibrated tank or through a test meter.

The number wheel with horizontal lines represents 1 gallon volume registered on gallon registers. The number wheel with horizontal lines represents .0001 cubic meters on cubic meter registers.

Measuring	Each number equals	Each revolution equals
Gallons	1	1
Cubic meters/liters	.0001	.001
Liters	.001	.01

m³



.1 .01 .001 .0001

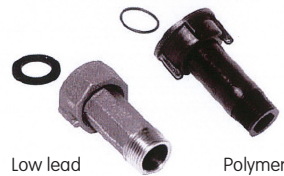
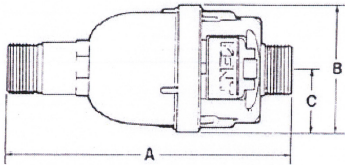
gallon



100s 10s 1s

V100 dimensions (inches)

Meter size	Length A	Width B	To centre C	Weight (lbs)
5/8 x 1/2 polymer	4 1/2	3 3/4	1 7/8	1
5/8 x 1/2 low lead	7 1/2	3 5/16	1 21/32	3
5/8 x 3/4 polymer	6 1/2	3 7/8	1 15/16	1
5/8 x 3/4 low lead	7 1/2	3 5/16	1 21/32	3.5



Meter couplings dimensions (inches)

Meter size	Coupling size	Tailpiece length	Tailpiece thread*	Coupling nut thread
5/8 x 1/2 polymer	1/2 BSP	1 3/4	1/2 BSP**	3/4 BSP
5/8 x 1/2 low lead	1/2 NPT	2 3/8	1/2 NPT	3/4 NPT
5/8 x 3/4 polymer	3/4 BSP	2 1/2	3/4 BSP	1 BSP
5/8 x 3/4 low lead	3/4 NPT	2 1/2	3/4 NPT	1 NPT

*Nominal thread size (I.P.)

**polymer couplings can not be used for 5/8 x 1/2 low lead meters.
1/2" BSP fits into 1/2" NPT threading.



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Lit Ref: 8514B1353-06-14