

## Solid State Meter

Sizes 5/8" x 3/4" and 3/4" Short; 3/4" Long; and 1"

**APPLICATIONS:** The Mueller Systems solid state meter (SSM) is available in 5/8" X 3/4" through 2" sizes. The SSM meter provides 8 digits of granular data for visual reads and 8 digits in encoded electronic format for use in Mueller Systems Mi.Net AMR/AMI applications. The meter can be used in any residential or commercial application where a high degree of accuracy at low flow rates is important.

**Construction:** The SSM meter utilizes a low lead copper alloy body with a polymer measuring tube and patented stainless steel reflectors. A heat treated glass lens and polymer lid and surround provide protection for the liquid crystal display. 3.6 volt lithium batteries provide power for the processor for 20 years of life. All internal electronics are potted to prevent water intrusion in the toughest environments.

**Operation:** The SSM meter utilizes ultrasonic measurement technology to provide outstanding accuracy across a broad flow range with extremely low pressure loss. The static meter design means there are no moving parts inside the meter so it will not degrade in accuracy over the life of the meter due to mechanical wear, providing exceptional revenue for years to come.

With starting flow rates as low as 0.017 GPM and ultra-low flow accuracy of 95% at 0.05 GPM on the 5/8' X 3/4" and 3/4" short sizes, the SSM is capable of wringing every drop of revenue from your system and detecting the smallest leaks and backflow conditions. The stainless steel reflectors and measuring tube design channel water over the reflectors to keep them free of debris and increase the velocity of the water as it passes through the tube, contributing to the high degree of meter accuracy.

The display provides large numerals and icons that permit verification of the 8 digit meter volume as well as direction of flow, error and alarm status, and battery life. A unique, never duplicated 8 digit serial number on the SSM meter faceplate and lid identifies it as the basis for all systems communication. The register face plate and housing provide visual information specific to the registration units, model, size, date of manufacture, and billing units, to provide verifiable and retrievable data in the event it is required.

**CONFORMANCE TO STANDARDS:** Mueller Systems SSM meter complies with AWWA C-700 requirements for accuracy and odometer wheel height as well as the American Standard Code for Information Interchange or ASCII.

**OPERATION:** When interrogated by a Mueller Systems AMR/AMI device, the SSM meter communicates the unique 8 digit serial number and 8 digit electronic reading in ACSII format where it can be recorded and maintained within the reporting structure of the AMR/AMI system. In the event that field testing is required, an optical button located on the display faceplate can be utilized to place the meter in test mode which provides excellent resolution for testing purposes.

**MAINTENANCE:** The Mueller Systems SSM meter is designed and manufactured to provide a 20 year service life with virtually no maintenance required. Meter lids are available as replacement components in the event of vandalism or the need for meter retrofits.



SSM 5/8" X 3/4" - 1

**Mueller Systems Solid State Meter  
5/8" X 3/4" - 1"**

### Materials and Specifications

MODEL	Solid State Meter (SSM)
REGISTER TYPE	Solid State Encoder Register
SIZES	5/8" through 2" Ultrasonic Meters
STANDARDS	Manufactured and tested to meet or exceed all applicable accuracy and pressure loss requirements of the AWWA C-700 standard and the American Standard Code for Information Interchange (ASCII)
TEMPERATURE OPERATING RANGE	34°F to 158°F
STORAGE TEMPERATURE RANGE	-4°F to 158°F
WATER TEMPERATURE RANGE	34°F to 140°F
CONNECTION OPTIONS	18" Nicor Connector, 5' or 25' flying lead wire, with factory potted connections
MATERIALS	Processor/register housing and lid - thermoplastic; Register lens - heat treated, tempered glass; LCD, polymer measuring tube, SST reflectors
AMR/AMI COMPATIBILITY	Mi.Net AMR/AMI system, and other AMR/AMI systems that can utilize the standard 8 digit encoder protocol output.

## GENERAL TECHNICAL DATA

	5/8" – 3/4" – 1"
Medium temperature range	°F 34 ... 122
Ambient operating temperature	°F 34 ... 158
Ambient storage temperature	°F -4 ... +140 (>90° F max. for one hour)
Maximum pressure	psi 200
Power Supply	3.6 VDC lithium battery
Battery Lifetime	20 years
Interfaces	Industry standard Encoder protocol, ASCII output for compatibility with all AMR/AMI systems
Data Storage	Alarms and consumption values
Protection class	IP 68

## TECHNICAL DATA DISPLAY

	5/8" – 3/4" – 1"
Display Indication	LCD, 8-digit, Gallon Visual display to 0.1 Gallons and Cubic Foot Display to 0.01 Cubic Feet
Units	Flow and volume (GPM, gal, Ft <sup>3</sup> )
Values displayed	Volume - flow - reverse flow - water temperatures - display test - error and alarm status - battery lifetime
Values transmitted	8 digit electronic resolution only

## APPROVAL

	5/8" – 3/4" – 1"
NSF	Complies with NSF/ANSI Standard 61, Annex F/G
AWWA	Meets or exceeds applicable sections of the AWWA/ANSI C700 Standards
FCC	Complies with FCC part 15 B

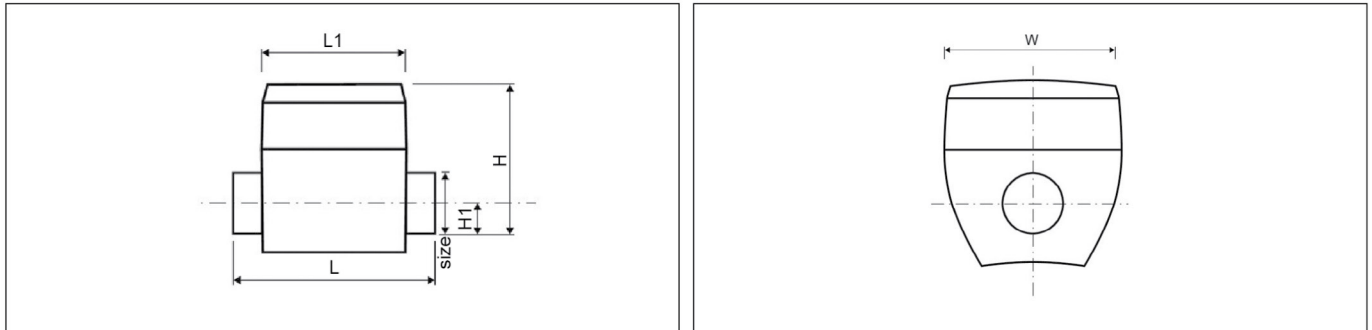
## MATERIAL

	5/8" – 3/4" – 1"
Measuring pipe	Lead-free copper alloy "CUPHIN®"
Register Housing	Engineered Polymer
Transducers	Composite
Reflectors	Stainless steel

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### DIMENSIONS

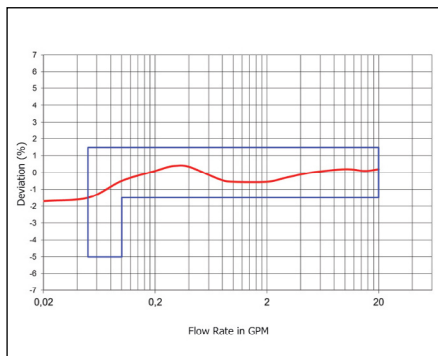


SSM 5/8" X 3/4" -1

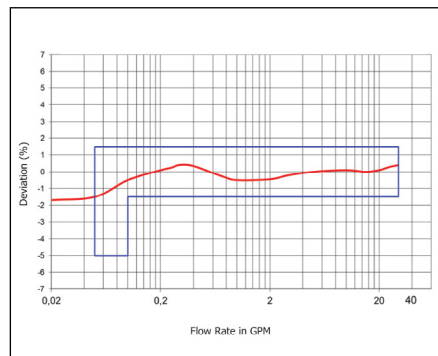
SIZE			5/8" X 3/4"	3/4" S	3/4" L	1"
LAY LENGTH	L	INCH	7.5"	7.5"	9.0"	10.75"
Register Length	L1	INCH	3.5"	3.5"	3.5"	3.5"
Register width	W	INCH	3.7"	3.7"	3.7"	3.7"
Height to center of pipe	H	INCH	4.0"	4.0"	4.0"	4.2"
Height to center of pipe	H1	INCH	1.3"	1.3"	1.3"	1.4"
Nominal thread size			1"-11.5 NPSM	1"-11.5 NPSM	1"-11.5 NPSM	1.25"-11.5 NPSM
Net weight		Lb.	2.8	2.8	3.1	3.5

### TYPICAL FLOW CHARTS

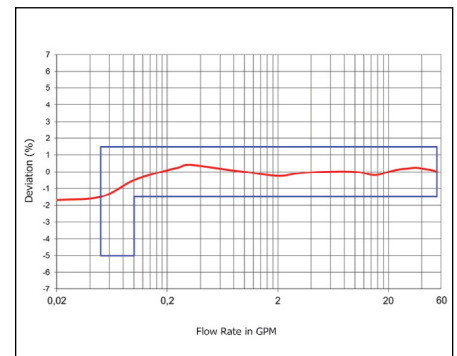
Typical Flow Chart 5/8" Mueller Systems SSM



Typical Flow Chart 3/4" Mueller Systems SSM



Typical Flow Chart 1" Mueller Systems SSM



### TECHNICAL DATA

SIZE			5/8" X 3/4"	3/4" S	3/4" L	1"
LAY LENGTH	L	INCH	7.5	7.5	7.5	10.75
Operating Flow Range		GPM	0.1 - 20	0.1 - 30	0.1 - 30	0.4 - 55
Low Flow Range		GPM	0.05 - 0.1	0.05 - 0.1	0.05 - 0.1	0.25 - 0.4
Operating Range accuracy		%	±1.5	±1.5	±1.5	±1.5
Low Flow Range accuracy		%	-5 / ±1.5	-5 / ±1.5	-5 / ±1.5	-5 / ±1.5
Pressure Loss			2.0 psi at 15 GPM	2.0 psi at 15 GPM	2.0 psi at 15 GPM	1.5 psi at 25 GPM
Operating Performance			In the temperature range of 45 to 85° F, meter consumption measurement is accurate to ±1.5% over the normal flow range (reference: approved test bench, ISO9001 certified).			