

# ULTRASONIC METER (USM)<sup>®</sup>



The Ultrasonic Meter series (USM<sup>®</sup>) has a wide temperature range with a high degree of accuracy. The remotely mounted register displays total volume and can display a momentary “Real Time” flow. The USM<sup>®</sup> Series provides a selectable dry contact pulse output. This unit is designed for heating and cooling systems.

The technology used is based on the static measurement of the transit time and offers many benefits:

- No moving parts
- Low pressure loss
- Large metering dynamics
- Low start flow rate
- Resistance to suspended particles
- Customer Selectable: U.S. Gallons or Liters
- Customer Selectable: Pulse Output
- 4-20mA output

This meter can handle temperatures from 41°F up to 266°F and pressure up to 232 psi. The USM<sup>®</sup> is available in ¾” (USM075) thru 4” (USM400) sizes and includes a low voltage transformer to power the unit. The USM<sup>®</sup> Series has a long-life expectancy.

The USM<sup>®</sup> can be installed horizontally, vertically or on an incline. It is important to make sure the line is ALWAYS full of water. The water flowing in the meter must be glycol free.



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## METER SELECTION CHART

METER SIZE	MODEL	CONTACT SETTING	*CONTINUOUS FLOW	FLOW RANGE
¾"	USM075	Customer Selectable	11 GPM	0.1 - 22 GPM
1"	USM100	Customer Selectable	26 GPM	0.25 - 52 GPM
1½"	USM150	Customer Selectable	44 GPM	0.37 - 88 GPM
2"	USM200	Customer Selectable	66 GPM	0.45 - 132 GPM
2½"	USM250	Customer Selectable	110 GPM	0.60 - 220 GPM
3"	USM300	Customer Selectable	176 GPM	0.75 - 352 GPM
4"	USM400	Customer Selectable	440 GPM	2.10 - 528 GPM

**\*Continuous Flow:** The size of meter selected should be based upon continuous flow, GPM, as opposed to pipe size.

### METER DIMENSIONS

METER SIZE	MODEL	LENGTH	HEIGHT	WIDTH	WEIGHT
¾"	USM075	11½"	¾"	2 <sup>5</sup> / <sub>8</sub> "	2 lbs.
1"	USM100	14 <sup>3</sup> / <sub>4</sub> "	3½"	2 <sup>5</sup> / <sub>8</sub> "	4 lbs.
1½"	USM150	11 <sup>7</sup> / <sub>8</sub> "	5 <sup>3</sup> / <sub>8</sub> "	5 <sup>7</sup> / <sub>16</sub> "	16 lbs.
2"	USM200	10 <sup>5</sup> / <sub>8</sub> "	5 <sup>7</sup> / <sub>8</sub> "	5 <sup>3</sup> / <sub>4</sub> "	17 lbs.
2½"	USM250	11 <sup>7</sup> / <sub>8</sub> "	6½"	6 <sup>3</sup> / <sub>4</sub> "	20 lbs.
3"	USM300	11 <sup>7</sup> / <sub>8</sub> "	7 <sup>1</sup> / <sub>8</sub> "	7 <sup>1</sup> / <sub>4</sub> "	25 lbs.
4"	USM400	14 <sup>1</sup> / <sub>8</sub> "	8"	8½"	38 lbs.

### SPECIFICATIONS

<b>Pressure Rating:</b>	232 psi.
<b>Temperature Range:</b>	41°F - 266°F. Protect the meter from freezing.
<b>PH Level Range:</b>	7.0 – 9.5
<b>Accuracy:</b>	+/- 2% of maximum flow when operating between minimum and maximum flow range.
<b>Register Options:</b>	U.S. Gallons or Liters
<b>Dry Contact Closure Time:</b>	50 milliseconds
<b>Register:</b>	NEMA 4X Case
<b>Body Material:</b>	Bronze (Leaded)

#### Installation Instructions:

1. Flush the line thoroughly after all plumbing changes to prevent contaminants from entering the line.
2. Install the meter horizontally with black box facing up OR vertically.
3. The meter must always be full of water.
4. If a strainer is to be installed; install the strainer upstream of your water meter to protect the meter and any other in-line process equipment from becoming jammed by particulate matter.
5. All valves used in a water line need to be operated slowly, and all electrically actuated valves should be slow closing. This will help eliminate possible meter damage from water hammer in your system. Carlon offers an excellent line of slow closing valves (SCV®).

**Warranty:** Carlon Meter, Inc. warrants its products to be free of defect in material or workmanship for a period of twelve months from the date of purchase. Contact us to obtain a copy of our complete statement of warranty.