

Paddle Wheel Flow Meter and Totalizer

An economically priced flow meter designed for use in industrial fields, including irrigation, aquaculture, aquariums, paper mills and swimming pools.

This paddle wheel flow meter, when used in conjunction with the appropriate adapter, can monitor flows in pipes ranging in size from ½” to 8”. Paddle wheel flow meters are universally accepted as a means of measuring flow electronically. Wide range, in flow rates, negligible headloss and good accuracy at a reasonable price, continue to make these meters popular. Easy removal for cleaning and repair permit the meters to be mounted in lines with moderate particulate levels.



- Rugged Compact Construction
- Battery Powered/ No External Wiring
- Weather & Chemical Resistant
- 1 Year Parts & Labor Warranty

Meter mounted on 2” Schedule 40 Pipe Section

This microprocessor-based flow meter utilizes an 8-digit liquid crystal display (LCD). Sturdy, compact, and water resistant allow these meters to be mounted outdoors. Isolated monitoring locations are also viable as power is supplied by a long, two year, life battery.

The paddle wheel, spinning at a rate linearly proportional to the velocity of the flow, activates a switch once per revolution. The time it takes the paddle to rotate, divided into the diameter of the pipe, results in the flow rate. Flow rate variations, from turbulence, are minimized by a microprocessor averaging process.



The user can choose to display the flow rate, the accumulated flow or alternate between the rate and totalized flow. To retain the totalizer value, the reset button can be deactivated

Programming is accomplished using three embossed buttons on the face. Normal programming consists of selecting the pipe size and schedule from a list; the default units are gallons/minute and gallons. For sizes not listed, the user can calibrate the meter using the inside diameter of the pipe. Advanced programming options allow calibration in units other than gallons/minute and gallons.



www.micmeter.com

Midwest Instruments & Controls
509 - 53 1/2 Ave. NE
Fridley, MN 55421
1-888-MIC METER

Guidelines

Paddle wheel type meters will only operate properly when the pipe is full and the flow rate is within the recommended range. Low accuracy and fouling problems are typical when pipes are too large and flow rates are not within the recommend range. Mounting configurations that allow air to become entrapped around the paddle will greatly effect the results. These meters will tolerate some sediment and debris; however fine sand tends to bind up the paddle bearing.

Wetted Material

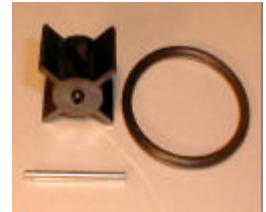
The paddle wheel and associated parts are injection molded from PVC plastic. The standard stainless steel paddle pin and Buna-N O-ring can be replaced with Teflon and Viton as options. An ABS enclosure houses the electronics and a scratch resistant polycarbonate faceplate with embossed buttons completes package.

Specifications

- Ambient Operating Temperature 0° - 150° F
- Maximum Percent Solids 1% of fluid volume
- Flow Rate Range 1.4 to 18 feet/sec.
- Linearity $\pm 2\%$ of full scale
- Repeatability $\pm 1\%$ of full scale
- Operating pressure/temperature corresponds to standard schedule 40 & 80 PVC pipe with a maximum operating pressure not to exceed 200 PSI
- Battery life greater than 1 year

Replacement Parts

A kit, consisting of an o-ring, paddle wheel and pin, is available. The battery can be purchase in the electronics section of department stores, at Radio Shack or through MIC. Other parts are also available.



Plug

Allows the system to be used while the meter is removed for cleaning or servicing.



Consider these attractively priced, easily installed and weatherproof meters when choosing your next paddle wheel flow meter. Please call for specific application questions or to locate a dealer in your area.



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Paddle Wheel Flow Meter

An economically priced flow meter designed for use in industrial fields, including irrigation, aquaculture, aquariums, paper mills and swimming pools.

Note: This meter does not have a totalizer, it displays only the flow rate (GPM). For Totalizer, see "Paddle Wheel Flow Meter with Totalizer" literature.

This paddle wheel flow meter, when used in conjunction with the appropriate adapter, can monitor flows in pipes ranging in size from ½" to 8". Paddle wheel flow meters are universally accepted as a means of measuring flow electronically. Wide range, in flow rates, negligible headloss and good accuracy at a reasonable price, continue to make these meters popular. Easy removal for cleaning and repair permit the meters to be mounted in lines with moderate particulate levels.



This microprocessor-based flow meter utilizes a 4-digit liquid crystal display (LCD). Sturdy, compact, and water resistant allow these meters to be mounted outdoors. Isolated monitoring locations are also viable as power is supplied by a long, two year, life battery.

The paddle wheel, spinning at a rate linearly proportional to the velocity of the flow, activates a switch once per revolution. The time it takes the paddle to rotate, divided into the diameter of the pipe, results in the flow rate. Flow rate variations, from turbulence, are minimized by a microprocessor averaging process.



Programming is accomplished using three embossed buttons on the face. Normal programming consists of selecting the pipe size and schedule from a list; the default units are gallons/minute. For sizes not listed, the user can calibrate the meter using the inside diameter of the pipe.

Advanced programming options allow calibration in units other than gallons/minute.



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Guidelines

Paddle wheel type meters will only operate properly when the pipe is full and the flow rate is within the recommended range. Low accuracy and fouling problems are typical when pipes are too large and flow rates are not within the recommend range. Mounting configurations that allow air to become entrapped around the paddle will greatly effect the results. These meters will tolerate some sediment and debris; however fine sand tends to bind up the paddle bearing.

Wetted Material

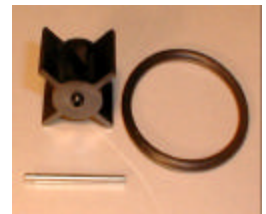
The paddle wheel and associated parts are injection molded from PVC plastic. The standard stainless steel paddle pin and Buna-N O-ring can be replaced with Teflon and Viton as options. An ABS enclosure houses the electronics and a scratch resistant polycarbonate faceplate with embossed buttons completes package.

Specifications

- Ambient Operating Temperature 0° - 150° F
- Maximum Percent Solids
1% of fluid volume
- Flow Rate Range
1.4 to 18 feet/sec.
- Linearity
full scale ±2% of

Replacement Parts

A kit, consisting of an o-ring, paddle wheel and pin, is available. The battery can be purchase in the electronics section of department stores, at Radio Shack or through MIC. Other parts are also available.



Plug

Allows the system to be used while the meter is removed for cleaning or servicing.



Consider these attractively priced, easily installed and weatherproof meters when choosing your next paddle wheel flow meter. Please call for specific application questions or to locate a dealer in your area.



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Adapters

These adapters mount the paddle wheel flow meter and paddle wheel flow meter with totalizer to pipes of various sizes and schedules.

Guidelines

Most difficulties with flow meters are traceable to improper mountings and/or improper pipe sizing. Paddle wheel flow meters rely on the momentum or movement of water to spin the paddle and keep it free of debris, sediment and air bubbles. Reduced accuracy and fouling problems are typical when pipes are oversized and flow rates are not within the recommend range. Pipes must remain full of water at all flow rates. This is especially critical when monitoring downward flows on vertical runs.



Pipe Mounted Adapter

(photo at left)

This system offers the simplest installation procedure and is cost effective for pipes 4" in diameter and smaller. These 13" pipe sections are available in sizes ranging from 1/2" to 4". The smaller sizes are only offered in schedule 80. Installation consists of removing a section of the existing pipe, coupling in the Pipe Mounted Adapter, allowing the glue to dry and restoring the flow.

<i>Pipe Size</i>	<i>Flow Range (GPM)</i>	<i>Available in</i>
1/2"	0.6 – 15	Schedule 80*
3/4"	2 – 30	Schedule 80*
1"	5 – 55	Schedule 80*
1 1/2"	10 – 125	Schedule 40 & 80
2"	15 – 200	Schedule 40 & 80
3"	40 – 450	Schedule 40 & 80
4"	70 - 800	Schedule 40 & 80

*Use schedule 80 adapters for schedule 40 applications.



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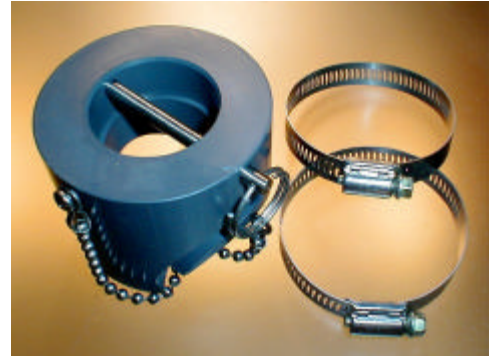
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Saddle Mounted Adapter

(pictured below)

These adapters mount directly to the existing plumbing. The adapter and pipe are cleaned and coated with either PVC cement or silicon sealer, then using the stainless steel clamps, the adapter is secured to the pipe. Next, the adapter is used as a guide, and 1 1/2" hole saw is used to bore through the pipe. These adapters will only accommodate schedule 40 and schedule 80 pipe; other pipes will require a custom-machined adapter. (See section below)

<i>Pipe Size</i>	<i>Flow Range (GPM)</i>	<i>Available in</i>
1 1/2"	10 – 125	Schedule 40 & 80
2"	15 – 200	Schedule 40 & 80
3"	40 – 450	Schedule 40 & 80
4"	70 – 800	Schedule 40 & 80
6"	120 – 1800	Schedule 40 & 80
8"	250 – 3200	Schedule 40 & 80



Custom Saddle Adapters

(same as saddle mounted adapter)

Adapters can be custom machined for pipes with smooth outer surfaces. In order to machine the adapters, the outside diameter and wall thickness of the pipe are required. The accuracy of the meter is greatly affected by the depth the paddle wheel is placed in the flow; therefore, wall thickness of the pipe must be accurate to within 0.010". Avoiding measuring mistakes saves both time and money. Allow two weeks for the machining of the adapters.

Plugs

PVC plastic plugs allow the meter to be removed for cleaning or servicing.



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