racine™ Vortex Flow Meters

RWL Series

Wafer-Style Liquid Flow Meter

- **Applications**
  - Cooling tower and water condensate
  - Municipal water treatment and distribution
  - Boiler feed water
  - Chemical processing
  - Water management
  - Pool and water park
  - HVAC
- Pipe sizes 1" to 3" (25 mm to 76 mm)

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CE

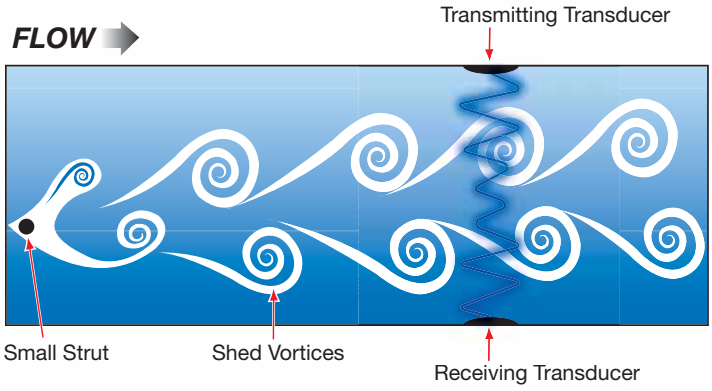
RWL Series **Wafer-Style Liquid Flow Meter**

The RWL Series meter is a wafer-style in-line flow meter designed to offer accurate flow measurements with extremely low pressure drop. The meter has no moving parts and is virtually maintenance-free. The RWL series is suitable for most low viscosity liquids. All meters in these series are available as a loop-powered device with 4-20 mA output, or they may be configured for 3-wire frequency pulse output.

Operating Principle

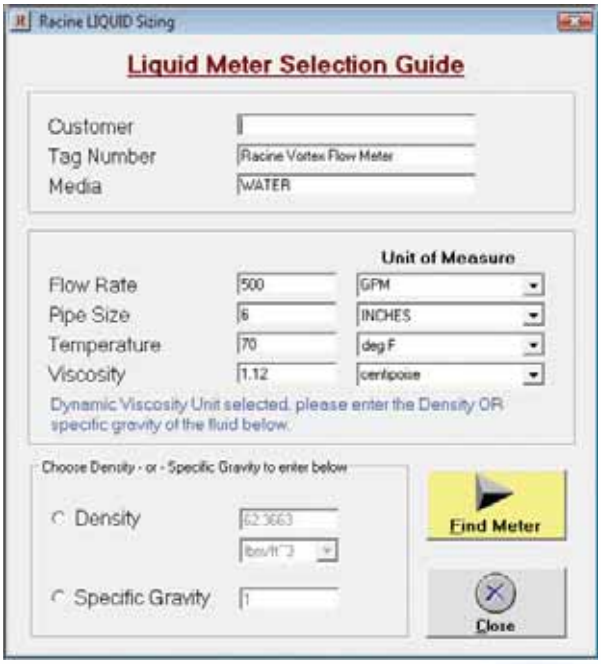
An everyday example of a vortex shedding phenomenon is a flag waving in the breeze: the flag waves due to the vortices shed by air moving across the flagpole. Within the flow meter, as flowing liquid moves across the tiny strut or "bluff bar", vortices are also shed but on a smaller scale. The meter transmits an ultrasonic beam through the vortex pattern downstream of the strut. As vortices are shed, the carrier wave of the ultrasonic signal is modified. This change in the carrier wave is measurable and moves in proportion to the number of vortices shed. Digital processing enables the vortices to be counted, and this value is converted into a velocity. Software converts velocity into a volumetric flow rate, in units of measure selected by the operator.

Racine Vortex flow meters utilize the smallest strut in the industry, which allows for high sensitivity; superior performance at very low flow rates; large turndown ratios; and low pressure drop.



Flow Meter Selection

Racine vortex offers a sophisticated software program to aid in the flow meter selection process. The program accounts for system pressure and temperature, as well as media density, viscosity and specific gravity. Select from a complete list of Metric and English engineering units, using default or customized reference standards for pressure and temperature. This program may be downloaded at no charge from www.racinevortex.com.



Specifications

Measured:	Liquids
Velocity Range:	2 to 18 FPS (0.6 to 5.5 MPS)
Process Temperature:	-20 °F to 300 °F (-28 °C to 150 °C)
Ambient Temperature Limits:	-20 °F to 150 °F (-28 °C to 66 °C)
Process Pressure:	Maximum at 100 °F: 300 PSIG (20 BARg) Maximum at 300 °F: 200 PSIG (14 BARg)
Response Time:	1 second
Accuracy:	±1% of reading
Repeatability:	0.5% of reading
Input Power:	13 to 32 VDC
Signal Output:	2-wire, 4-20 mA; 3-wire, 4-20 mA and/or pulse
Wetted Components:	316 stainless steel, PPS plastic, Viton®
Flange Compatibility:	ANSI 150, 300 and 600; DIN 25-40-50 and 80
Maximum Viscosity:	10 centistokes - consult factory for higher viscosity
Certifications:	CE
Options:	Integral display of flow rate and total w/programmable keypad FM-approved explosion-proof enclosure

Tel: 262-639-6770

Flow Ranges*

Velocity: 2 and 18 FPS (0.6 and 5.5 MPS)				
NOMINAL SIZE in. (mm)	GPM*		LPM*	
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
1.0 (25)	5	44	19	167
1.5 (38)	11	100	42	379
2.0 (51)	20	175	76	662
3.0 (76)	44	400	167	1514

*Based on water at 73 °F (23 °C)

Consult Racine Vortex Sizing Software for flow rates and units other than those listed above: download at www.racinevortex.com

Part Number Construction

RWL Series Wafer Flow Meters for Liquids

R	W	L	d d	-	S	S	g	h	i
Racine	Wafer	Liquid	Meter Size		Mounting Type	Meter Material	O-ring Material	Approvals	Enclosure

Part Number: R W L □□ - S S □ □ □

***dd* Meter Size**
- **10)** 1" wafer
- **15)** 1-1/2" wafer
- **20)** 2" wafer
- **30)** 3" wafer

***e* Mounting Style**
- **S)** Mounts between 150#, 300# or 600# flanges (standard)

***f* Meter Material**
- **S)** 316SS (standard)

***g* O-ring Material**
- **1)** Viton® (standard)
- **3)** Ethylene Propylene

***h* Approvals**
- **N)** CE (Blind Transmitters)
- **S)** General Purpose (Display meters)

***i* Enclosure**
- **N)** NEMA 7 - standard
- **X)** FM - Explosion Proof
- **D)** Digital display of flow rate and total. NEMA 4X (IP66) polycarbonate

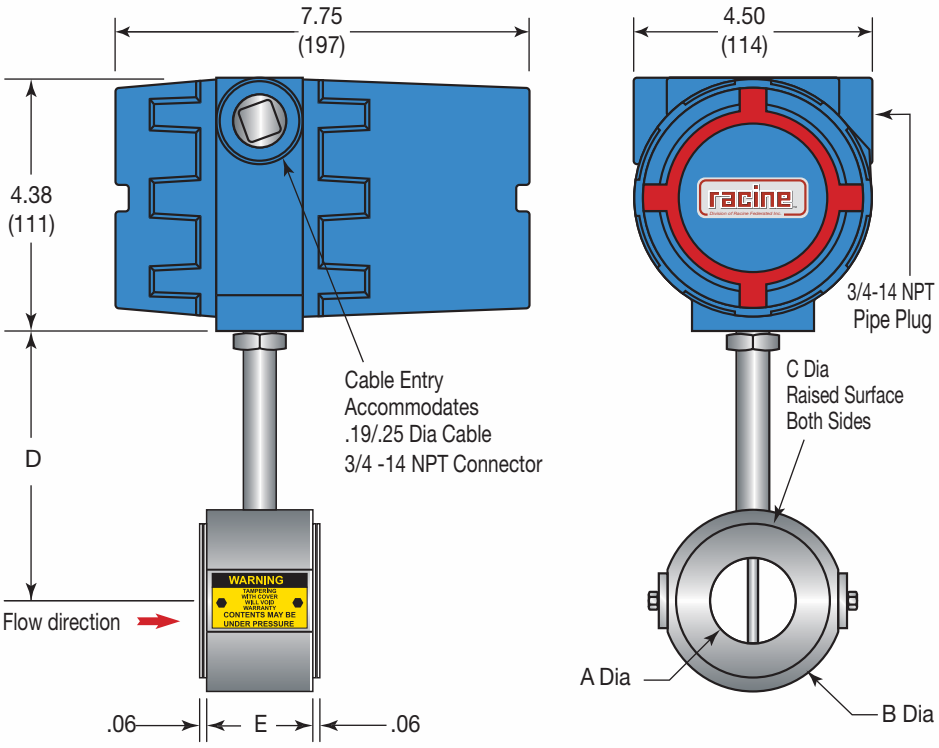
Optional Display Version:

The RWL meter is also available w/digital display of flow rate and total. This version includes a programmable keypad for selecting units of measure, in-field calibration, meter diagnostics and password protection.

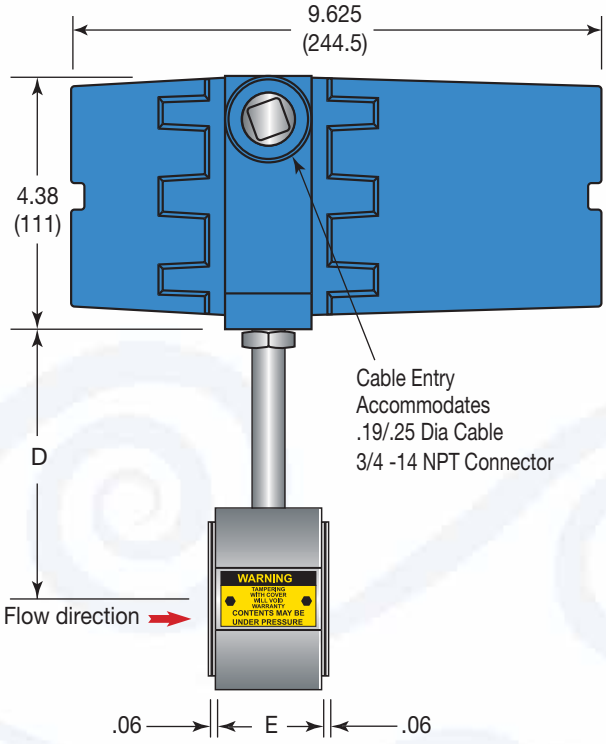
Input Power:	13 to 30 VDC
Signal Out:	4-20 mA (two-wire loop)
Enclosure:	NEMA 4X (IP66) polycarbonate

Dimensional Drawings

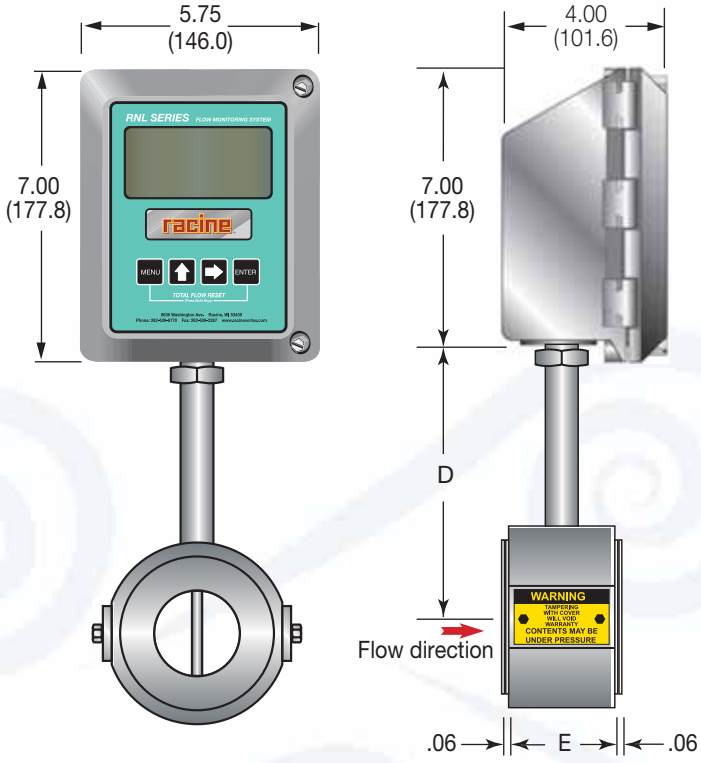
Inches (mm)					
PIPE SIZE	A	B	C	D	E
1 (25)	0.875 (22)	2.62 (67)	2 (51)	7.81 (198)	2.12 (54)
1.5 (38)	1.375 (35)	3.37 (86)	2.88 (73)	8.18 (208)	2.12 (54)
2 (51)	1.75 (44)	4 (102)	3.6 (91)	8.5 (216)	2.12 (54)
3 (76)	2.75 (70)	5 (127)	4.8 (122)	9 (229)	2.38 (60)



Explosion Proof Enclosure



Digital Display



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