

I. Functions and characteristics

- 1.) Model: VSPWM-075-HD-NSF
- 2.) 3/4" vertical water meter for measuring water flow in cubic feet.
- 3.) ISO 4064 Standard Class B
- 4.) AWWA C708
- 5.) With pulse-output communication for remote reading.
- 6.) No power source required.
- 7.) NSF/ANSI/CAN 61 certified



II. Technical specifications

- 1.) Dimensions: (see fig. 4)
- 2.) Weight: 4.08 lbs
- 3.) Material: Stainless Steel – grade 304
- 4.) Pulse rate: 1 pulse / 0.01 ft³; 1 pulse = ~0.075 gallon
- 5.) Pulse Vmax = 24 AC/DC, I_{max} = 0.01A
- 6.) Accuracy: 3% from Q_{min} to Q_t, 1.5% from Q_t to Q_s
- 7.) Maximum reading before zeroing: 999,999.999 ft³ (~9,500,000 gal.)
- 8.) Minimum reading: 0.002 ft³
- 9.) Maximum operating pressure: 150 PSI
- 10.) Minimum flow (Q_{min}): 4 ft³/hr, 0.5 GPM
- 11.) Maximum flow (Q_s): 240.6 ft³/hr, 30 GPM
- 12.) Nominal flow (Q_p): 120.3 ft³/hr, 15 GPM
- 13.) Transitional Flow (Q_t): 16 ft³/hr, 2 GPM
- 14.) Normal flow range: 16–240 ft³/hr, 2–30 GPM
- 15.) Temperature range: 0-50°C / 32-122°F
- 16.) 3/4 Inch NPT male threads

III. Operation

This meter can be used as a traditional water meter where the water consumption is read off of the meter dials (Fig. 3). It also has the added functionality of being able to connect the pulse-output wires to a pulse counting device. This meter produces a pulse for every 1/100 cubic foot (~0.0748 gallons, or 0.283 liters) that flows through the meter. This pulse-output water meter can be connected to our v.4 or v.5 Omnimeters (Fig 1). The pulse counting devices can then be connected to a computer, either locally or over the internet.

IV. Installation

- 1.) We recommend that this meter be installed by a qualified plumber.
- 2.) Install vertically with the dial facing upwards. (Fig 2)
- 3.) Use teflon tape or pipe dope when connecting pipe fittings to the meter's NPT pipe threads.

*Note: You do not need to use dielectric unions when connecting dissimilar metal fittings to the stainless fittings provided with the meter.

V. Pulse Output

- 1.) Use in conjunction with our 8 Digit Pulse Counter to see a digital display of the total pulse counts.
- 2.) Use in conjunction with our v.4 or v.5 Omnimeters for remote metering applications.
- 3.) The v.4 and v.5 Omnimeters have ports for three separate pulse inputs (ports 11, 12 and 13). All of the pulse input devices share a common ground wire (Port 14). These wires can be up to 200' long.
- 4.) Connect the red wire from the water meter to either port 11, 12, or 13.
- 5.) Connect the black wire to port 14. See (Fig. 1)
- 6.) Power the Omnimeter with 110–240VAC. Connect a hot leg into port 7 and the neutral into port 10.

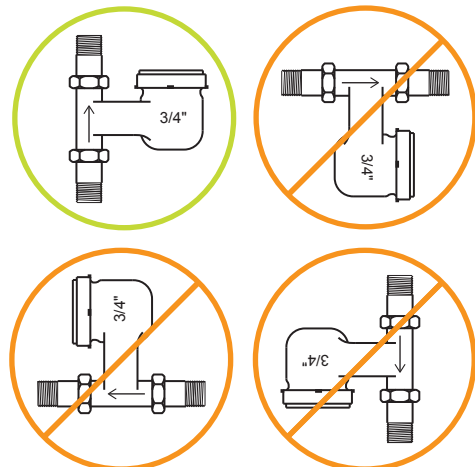
For more information on how to read this meter remotely we recommend watching this video: <https://youtu.be/l8oYAUmuBD8>

You can also refer to the various communication devices that we offer on our website.



(Fig. 1)

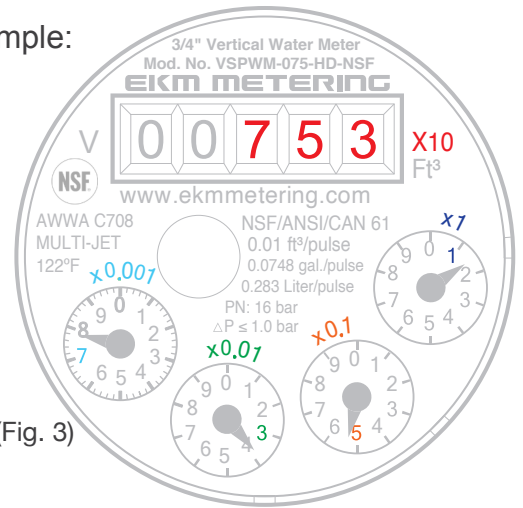
Install Vertically with the Dial Facing Up



(Fig. 2)

V. Reading Your Meter Dials

Example:



(Fig. 3)

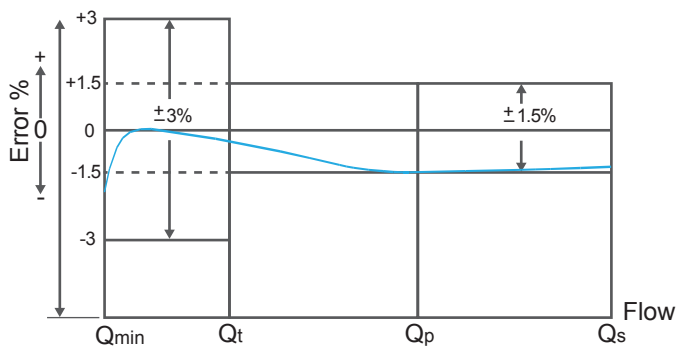
$$\begin{aligned}
 &(753 \times 10) \\
 &+ (1 \times 1) \\
 &+ (5 \times .1) \\
 &+ (3 \times 0.01) \\
 &+ (7 \times 0.001) \\
 &= 7,531.537 \text{ ft}^3
 \end{aligned}$$

Conversion Multipliers:	
Cubic Feet:	x 1
Pulses:	x 100
Gallons:	x 7.48052
Cubic Meters:	x 0.0283168
Liters:	x 28.3168

$$\begin{aligned}
 7,531.537 \times 1 &= 7,531.537 \text{ cubic feet} \\
 7,531.537 \times 100 &= 753,153.7 \text{ pulses} \\
 7,531.537 \times 7.48052 &= 56,339.81 \text{ gallons} \\
 7,531.537 \times 0.0283168 &= 213.27 \text{ cubic meters} \\
 7,531.537 \times 28.3168 &= 213,269.03 \text{ Liters}
 \end{aligned}$$

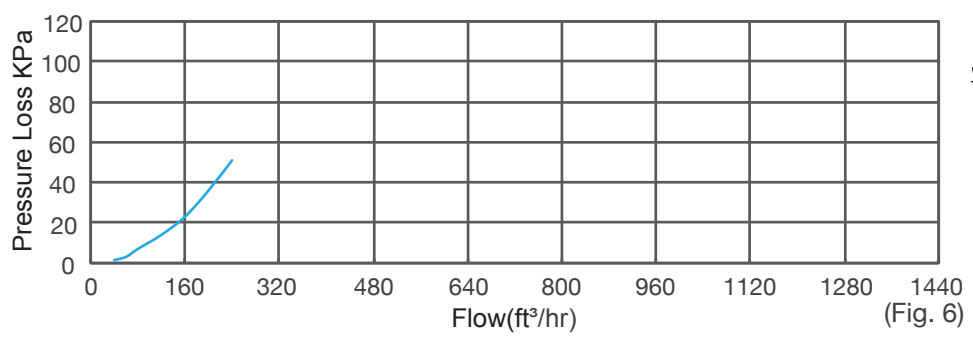
* Note: Most Utilities in the United States round to the nearest 100 cubic feet. So in this case, only the red portion above, showing 7,530, would be necessary for determining usage.

VI. Error Curve:



(Fig. 5)

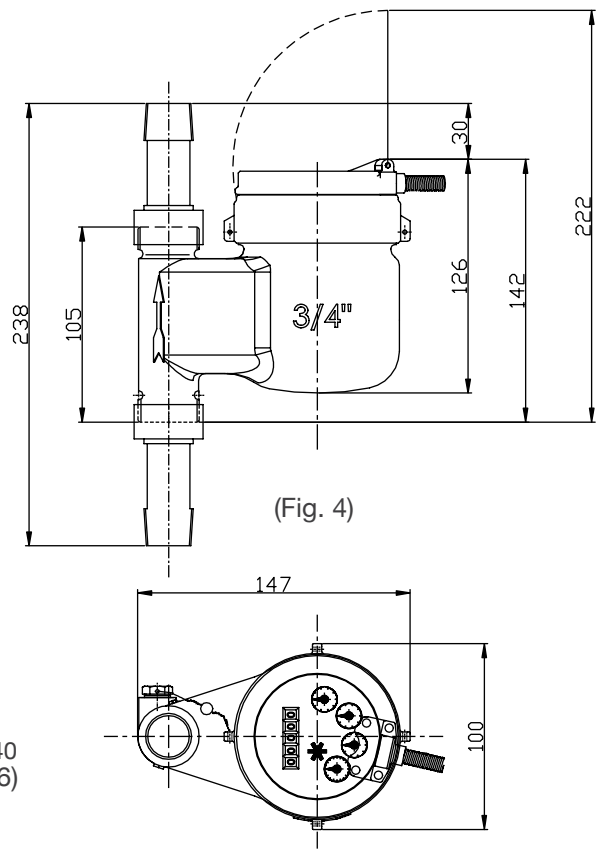
VII. Pressure Loss Curve:



(Fig. 6)

Flow (ft³/hr)	40	60	80	120	160	200	240	320	400	640	800	1440
3/4" (KPa)	1.5	3.1	7	14	23	36	51					
1.0" (KPa)		3.2	5.5	12	18	26	36	63	101			
1.5" (KPa)				0.9	1.2	3	4.2	9.3	16	35	54	
2.0" (KPa)						1.8	3	6	11	25	41	101

(Fig. 7)



(Fig. 4)