



I. Functions and characteristics

- 1.) Model: SPWM-100-NSF
- 2.) 1.0" water flow 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
- 8.) NTEP Certified



II. Technical specifications

- 1.) Dimensions: (see Fig. 4)
- 2.) Weight: 4.85 lbs
- 3.) Material: Stainless Steel 304
- 4.) Pulse rate: 1 pulse / 0.10 ft³; 1 pulse = approx. 0.748 gal.
- 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.) Minimum Reading: 0.0068 ft³ (0.05 gal.)
- 8.) Maximum reading before zeroing: 999,999.99 ft³ (7,480,519.41 gal.)
- 9.) Maximum operating pressure: ≤1MPa = ≤150 PSI
- 10.) Minimum flow (Q_{min}): 6.0 ft³/hr, 0.75 GPM
- 11.) Transitional Flow (Q_t): 7.0 ft³/hr, 0.87 GPM
- 12.) Nominal flow (Q_p): 200.52 ft³/hr, 25 GPM
- 13.) Maximum flow (Q_s): 401.0 ft³/hr, 50 GPM
- 14.) Normal flow range: 24–401 ft³/hr, 3–50 GPM
- 15.) Temperature range: 0-50°C/ 32-122°F
- 16.) 1.0 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 face of the meter. 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 0.10 cubic feet (approx. 0.748 gallons) that flows by the meter. This pulse-output water meter can be connected to our EKM-Omnimeter Pulse v.4 (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 horizontally with the dials facing upwards. (Fig 2)
- 3.) For best accuracy, make sure the length of pipe before the meter is straight and that it is at least 10x the diameter of the pipe. The pipe after the exit of the water meter should also be straight and at least 5x the diameter of the pipe.
- 4.) Place gaskets between the mating surfaces of the meter body and the male threaded adapter.

- 5.) Tighten the threaded adapter onto the meter body using the nut.
- 6.) Use teflon tape or pipe dope when connecting other 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.*

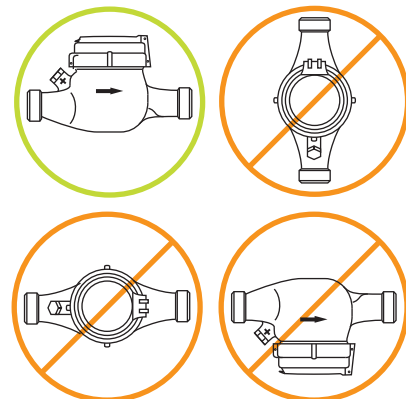
V. Pulse Output

- 1.) Use in conjunction with our pulse counter to see a digital display of the total pulse counts.
- 2.) Use in conjunction with our EKM-Omnimeter Pulse v.4 for remote metering applications.
- 3.) The EKM-Omnimeter Pulse v.4 has ports for three separate pulse inputs (ports 11, 12 and 13). All of the pulse input devices share a common ground wire (Port 14). The wires can be up to 10,000 ft long.
- 4.) Connect the red or white wire from the water meter to either port 11, 12, or 13. Connect the black wire to port 14 (See Fig. 1). Disregard the blue wire.
- 5.) The easiest way to power the EKM-Omnimeter Pulse v.4 is with 110v AC. Connect a hot leg into port 7 and the neutral into port 10.
- 6.) For more information on how to read this meter remotely, please refer to the various communication devices that we offer on our website.



(Fig. 1)

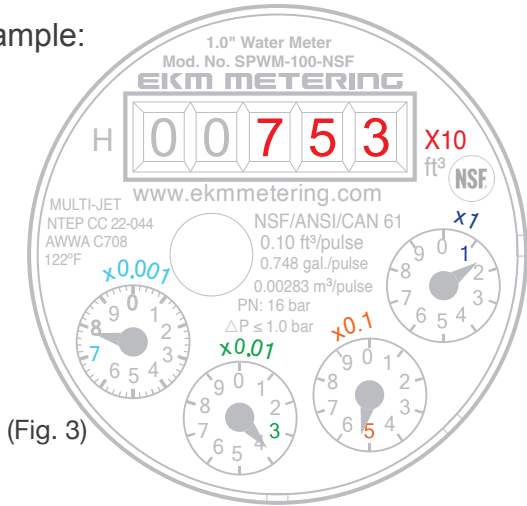
Install Horizontally with the Dial Facing Up



(Fig. 2)

V. Reading Your Meter Dials

Example:



(Fig. 3)

$$\begin{aligned}
 &(753 \times 10) \\
 &+ (1 \times 1) \\
 &+ (5 \times 0.1) \\
 &+ (3 \times 0.01) \\
 &+ (7 \times 0.001) \\
 &= \underline{7,531.537 \text{ ft}^3}
 \end{aligned}$$

Conversion Multipliers:

- Cubic Feet: x 1
- Pulses: x 10
- Gallons: x 7.48052
- Cubic Meters: x 0.0283168
- Liters: x 28.3168

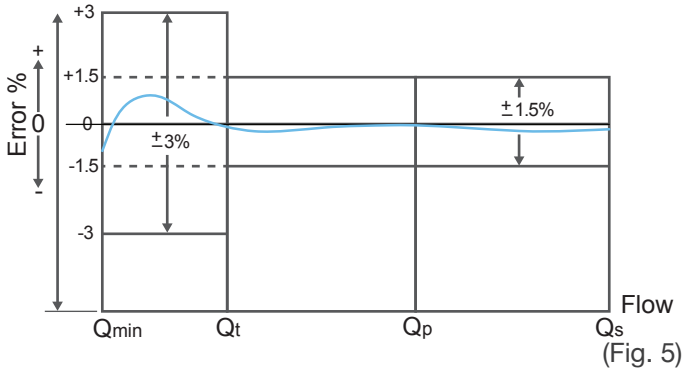
$$\begin{aligned}
 7,531.537 \times 1 &= 7,531.537.00 \text{ cubic feet} \\
 7,531.537 \times 10 &= 75,315.37 \text{ pulses} \\
 7,531.537 \times 7.48052 &= 56,339.81 \text{ gallons} \\
 7,531.537 \times 0.0283168 &= 213.27 \text{ cubic meters} \\
 7,531.537 \times 28.3168 &= 213,269.03 \text{ Liters}
 \end{aligned}$$

* Note: Most Utilities in the United States round to the nearest 100 cubic feet. So in this case, only the red portion above, showing 7,530.00, would be necessary for determining usage.

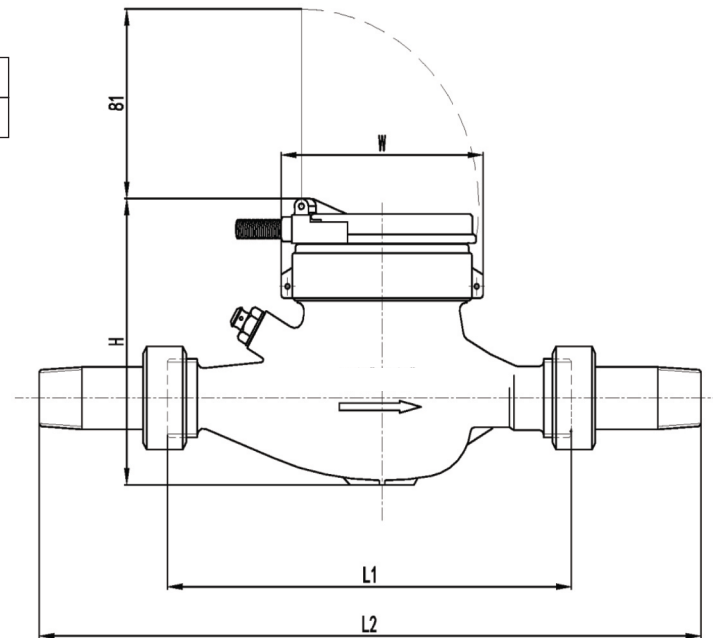
VI. Dimensions and Weight

L1	L2	H	W	WEIGHT
260mm	400mm	130mm	100mm	4.85 lbs

VII. Error Curve:

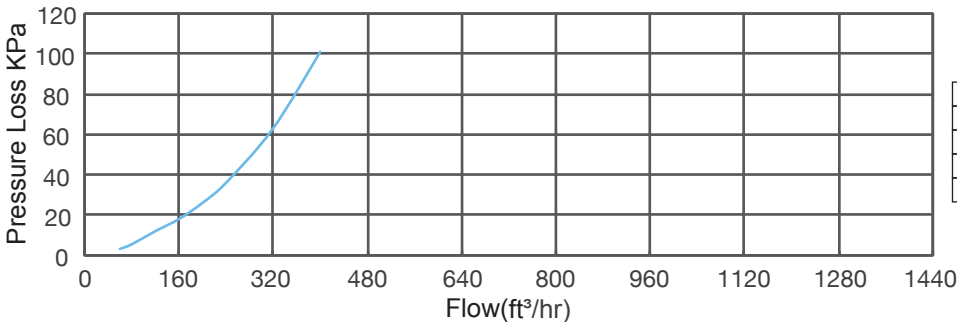


(Fig. 5)



(Fig. 4)

VIII. Pressure Loss Curve:



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. 6)