

## WM-NLC Series

### Lead-Free Water Meter



The WM-NLC Series meter is a multijet dry-type totalizing water meter available in sizes from 1/2" to 2". It is produced in an ISO9001 certified production facility and is constructed in conformance with AWWA C708 standards. The product complies with NSF/ANSI 61 Annex G and conforms with lead-free plumbing as defined by California, Vermont, Maryland and Louisiana state laws and the U.S. Safe Drinking Water Act that took effect January, 2014. It is an ideal choice for a range of municipal and industrial water metering applications.

Water flows through the meter's strainer (inlet and internal) and into the measuring chamber where it drives the impeller. A driving magnet transmits the movement of the impeller to a driven magnet located within the sealed register. The magnet is connected to a gear train which translates the impeller rotations into volume totalizers displayed on the meter's register dial face.

The WM-NLC Series water meter is top loaded and consists of three basic components: main case, measuring chamber, and head ring. The main cases of all sizes are constructed using C87850 low-lead brass alloy.

#### FEATURES

- All parts in contact with water are constructed of corrosion-resistant materials.
- Body and coupling are made with low-lead brass alloy C87850 and meets potable water standards.
- Impeller is the only moving part in contact with water, giving the meter long life and consistently reliable operation.
- Extra filter at the inlet of the meter body permits cleaning without having to open the meter.
- Dial plate design in US Gallons.
- Optional check valve to avoid reverse flow (lead-free).
- Optional pulse output consisting of plastic housing with 2-wire (red and black) reed switch and cable.

#### PRESSURE RANGE

Up to 150 PSI.

#### TEMPERATURE RANGE

Up to 122°F.

#### SPECIFICATIONS

##### Maximum Reading:

050, 075 & 100: 9,999,999.99

150 & 200: 9,999,999.9

##### Accuracy:

Normal flow:  $\pm 1.5\%$

Low flow:  $\pm 3\%$

#### MATERIALS OF CONSTRUCTION

##### Body and Couplings:

EcoBrass

##### Internals:

Engineered thermoplastic

##### Magnet:

Alnico

#### OPTIONAL PULSE OUTPUT SPECIFICATIONS

##### Sensor:

Reed switch

##### Pulse Rates:

050, 075 & 100: 1 pulse/1 gal.

150 & 200: 1 pulse/10 gal.

##### Maximum Current:

10 mA

##### Maximum Voltage:

24 VAC/VDC

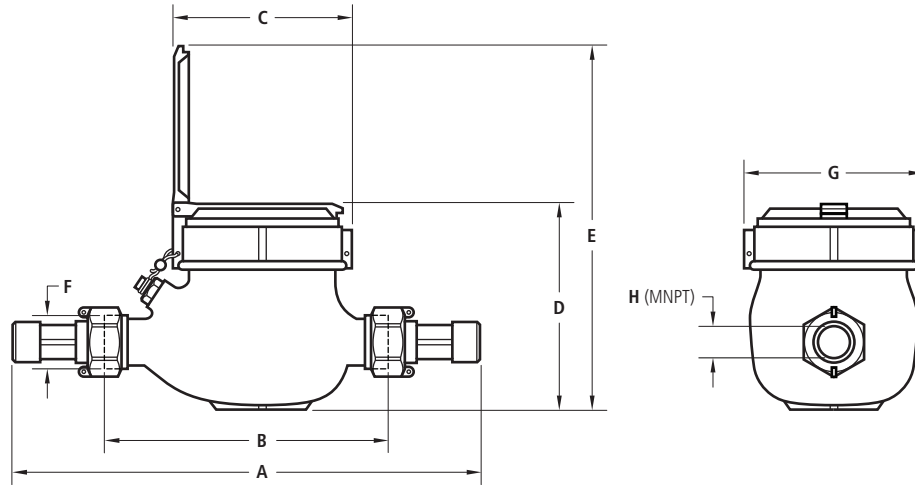
##### Cable Length:

5' standard,

2000' maximum run

# WM-NLC Series

Lead-free water meter  
(1/2" to 2" end connections)

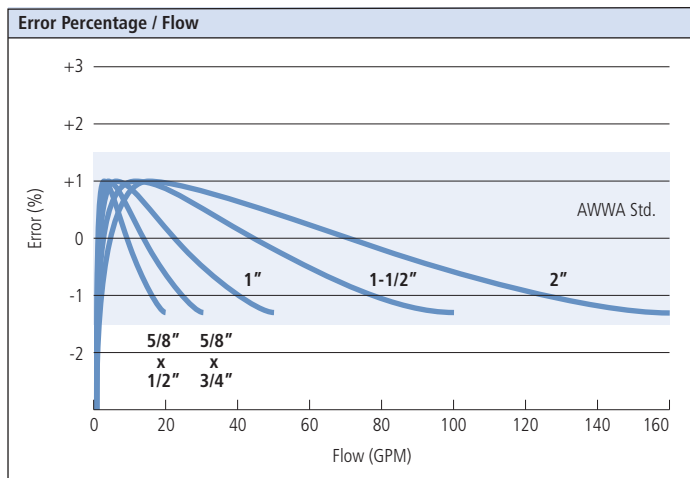


## DIMENSIONS, WEIGHTS & SPECIFICATIONS

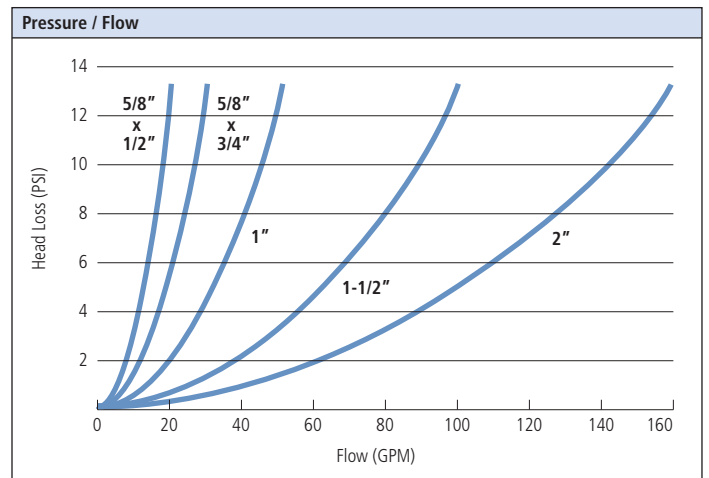
Size	A	B	C	D	E	F	G	H (MNPT)	Flow Rate (GPM)			Normal Flow (GPM)	Wt. (lbs.)	Model No.
									High	Continuous	Low			
5/8" x 1/2"	10.20	7.5	3.7	4.3	7.6	0.75	3.7	0.50	20	10	0.25	1-20	3.75	WM-NLC-050
5/8" x 3/4"	11.57	7.5	3.7	4.3	7.6	1.00	3.7	0.75	20	10	0.25	1-20	4.25	WM-NLC-075
1"	15.20	10.3	3.9	4.7	8.2	1.25	3.9	1.00	50	25	0.75	3-50	6.50	WM-NLC-100
1-1/2"	17.00	11.9	4.9	5.6	10.1	2.00	4.9	1.50	100	50	1.50	5-100	8.25	WM-NLC-150
2"	17.00	11.9	4.9	5.6	10.1	2.50	4.9	2.00	160	80	2.00	8-160	13.75	WM-NLC-200

A = total length including connection and gasket without compression.

## ACCURACY CURVES



## HEAD LOSS CURVES



# KAL-D06

## Miniature, Low Cost, LCD, 8 Digit Electronic Counter

### Features

- 8 Digits Standard
- Meets NEMA 4X and IP65 Ratings
- Long Life (10 Year) Lithium Battery
- 10 kHz Count Speed
- Screw Terminal Block
- Slow Speed Input for Contact Closures
- High Speed Input for Sinking Inputs from a Max. of 18VDC Without Module
- Quadrature and High Voltage (10 to 240 V AC; 2 to 110V DC) Inputs Optional
- UL Listed

### Description:

The KAL-D06 counters are small, lithium battery powered, totalizing counters that are panel mounted. The counters are designed as replacements for standard electro-mechanical counters. They use the latest custom CMOS technology and incorporate an 8 digit, 0.354" (9mm) high, LCD display.

It operates from a long life lithium battery (life 10 years) and can be operated from contact closure or high speed electronic devices. No separate alkaline batteries are required. The front reset button can be disabled if desired.

### Specifications:

**Battery:** Non-replaceable Lithium battery, expected life of 10 years at 20°C

**Display:** 8 digit black LCD, Digit size 0.354" (9mm) high, leading zero blanking,

**Backlight:** backlight requires external 5V supply ( $\pm 0.5V$  @ 20mA). 12V, 24V and 30V can be used with the use of an external resistor, see backlight wiring diagram for details and resistor values.

**Reset:** Panel or remote (can be disabled if desired)

**Count Range:** 0-99999999, rollover to 0

### Temperature Range:

Operating: 14 to 140°F (-10 to 60°C)  
Storage: -4 to 140°F (-20 to 60°C)

**Battery Life:** 10 years at 20°C (calculated)

**Relative Humidity:** 80% max. up to 31°C, decreasing to 50% max. at 40°C

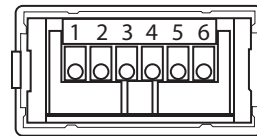
**Connection:** Finger-proof screw terminal for wires up to 0.06"<sup>2</sup> (1.5mm<sup>2</sup>)

**Sealing:** NEMA 4X/IP65; **Remove film from self adhesive gasket before use!** Overvoltage Category II, Pollution Fegree 2 (IEC 64)

**Certifications:** UL Listed

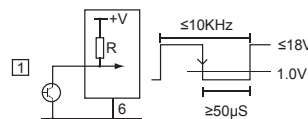


### KAL-D06 Wiring:



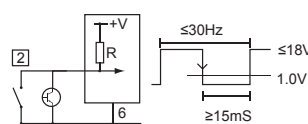
- 1 - High Speed Count Input
- 2 - Low Speed Count Input
- 3 - External Reset Input
- 4 - Direction Input
- 5 - External Power for Backlight
- 6 - 0V, Common

### High Speed Count Input:



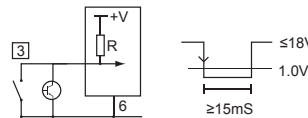
- Sink input NPN
- R = Internal resistor 3.3MΩ
- Max 18V, theshold 1V
- Negative edge trigger
- Max. 10kHz, min. 50μs

### Low Speed Count Input:



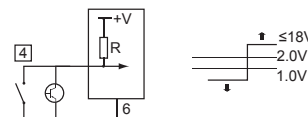
- Sink input NPN or contact closure
- R = Internal resistor 3.3MΩ
- Max 18V, theshold 1V
- Negative edge trigger
- Max. 30Hz, min. 15ms

### External Reset Input:



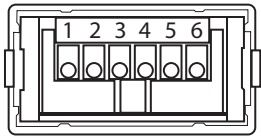
- Sink input NPN or contact closure
- R = Internal resistor 3.3MΩ
- Max 18V, theshold 1V
- Negative edge trigger
- Min. 15ms

### Direction Input:



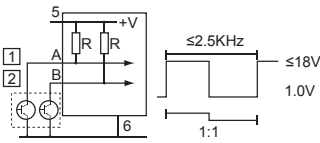
- Sink input NPN or contact closure
- R = Internal resistor 3.3MΩ
- UP: Not connected or >2V (logic 1), max 18V
- DOWN: Connected to common or <1V (logic 0)
- Direction signal must change >5μs before Count signal.

### KAL-DQUAD06 Wiring



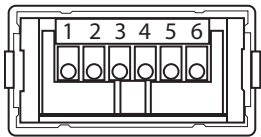
- 1 - Count Input A
- 2 - Count Input B
- 3 - External Reset Input
- 4 - Not used
- 5 - External Power for Backlight and Input Circuit
- 6 - 0V, Common

### Quadrature Input:



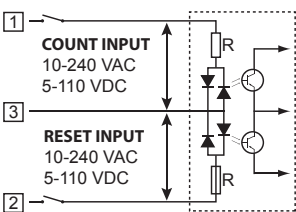
- Count Inputs A & B**
- Sink input NPN or push-pull signals, NOT source only
  - R = Internal resistor 3.3M $\Omega$
  - Max. +V
  - Max. 2.5kHz
  - Mark to space ratio 1:1

### KAL-D06AC/DC Wiring

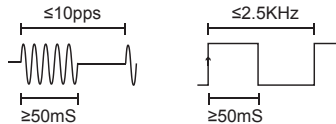


- 1 - High Voltage Count Input
- 2 - High Voltage External Reset Input
- 3 - Common for pins 1 & 2
- 4 - Direction Input
- 5 - External Power for Backlight
- 6 - 0V, Common for pins 4 & 5

### High Voltage Input:

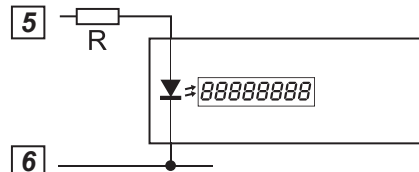


- High Voltage Count Input**
- Opto-isolated
  - R = Internal resistor 50k $\Omega$
  - 10 - 240V AC  $\pm 10\%$
  - 5 - 110V DC  $\pm 10\%$
  - Max. 10 pulses per second
  - Min 50mS



- High Voltage Reset Input**
- Opto-isolated
  - R = Internal resistor 50k $\Omega$
  - 10 - 240V AC  $\pm 10\%$
  - 5 - 110V DC  $\pm 10\%$
  - Min 15mS

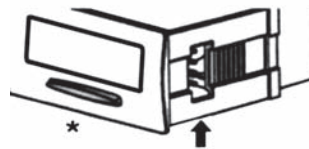
### Backlight Wiring



- 5V: R = 0 $\Omega$
- 12V: R = 360 $\Omega$
- 24V: R = 1K $\Omega$
- 30V: R = 1.2K $\Omega$

External supply for backlight is 5 VDC @ 20mA  
R = external resistor; see table next to diagram above.

### Jumpers



● ● Front Panel Reset Enabled

● ● Front Panel Reset Disabled

● ● 88888888

● ● 8888888.8

● ● 888888.88

● ● 88888.888

### How To Order:

- KAL-D06** ..... 8 digit counter with 10 yr battery
- KAL-DQUAD06**..... 8 digit counter with 10 yr battery with Quadrature Input
- KAL-D06AC/DC** ..... 8 digit counter with 10 yr battery with High Voltage Input

### Accessories

- N7** - Explosion proof housing (see accessories section)
- E200** - Outdoor Enclosure (see accessories section)

### Dimensions

