



# Line Seiki

# Product Catalog

Ver.1

**Electronic Counter /**

**Electromagnetic Counter /**

**Mechanical Counter /**

**Length Measuring Counter /**

**Pulse Generator /**

**Tachometer /**

**Thermometer /**



## Company Overview

"As long as humans live counting will be a necessity." ~ Line Seiki

Human progress and development over the years has been measured by numbers. Statistics are as vital to the ordinary student or hobbyist as they are to experienced professionals. For 60 years now, Line Seiki has served this everyday need to count, measure, track, and monitor various activities through its wide variety of industrial counters, measuring instruments, and sensors.



From its humble beginnings as a counter maker in post-World War II Japan, Line Seiki has grown to become a global leader in industrial, professional, and even personal counter-serving the needs of markets across the Asia Pacific, Europe, and the Americas. As a pioneer in counting technology, it has perfected the science and art of measurements while keeping up with the latest counting technology. Wherever you will see humans and their need to count and measure, you will see Line Seiki.

Now with five locations throughout the Asia Pacific and a vast network of distributors globally, Line Seiki manufactures and supplies product models for just about every field or industry. Our products include the most advanced electronic, electro-mechanical and mechanical counters, tachometers, digital thermometers, tally counters, sensors, and encoders as well as other customized products. Applications range from factory automation to speed and time measurements for hobbyists, to everyday household uses. Moreover, many of our products are commonly used in original machine manufacture (OEM), including those found in vending machines, gaming machines, textile machines, plastic injection machines, metal stamping machines, and so on.

Our core business, above all, is product development. We fuse decades of experience with the latest advances in technology to engage in technological cooperation and joint product development with other world leaders in the field of counting. So as long as humans live, so will Line Seiki.

## Group Company

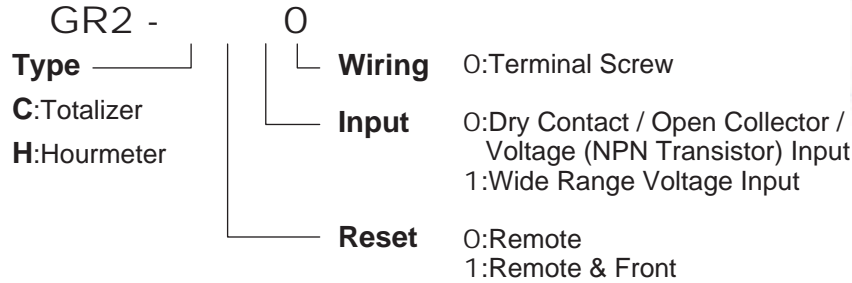
- Line Seiki Co., Ltd. (Japan)
- Line Seiki Philippines Inc. (Philippines)
- Line Seiki Asia Pacific Co., Ltd. (Philippines)
- LS Instrumentation Sales & Services (Philippines)
- Taiwan Line Seiki Co., Ltd. (Taiwan)
- Korea Line Seiki Co., Ltd. (Korea)



## History

History	
<b>Feb, 1949.</b>	A trading company handling measuring tools was inaugurated in Tokyo, Japan.
<b>Apr, 1954.</b>	Line Seiki Co., Ltd. was incorporated in Tokyo, Japan.
<b>May, 1985.</b>	Shirakawa factory was established in Fukushima-Ken, Japan.
<b>Jun, 1988.</b>	Korea Line Seiki was established in Seoul, Korea.
<b>Jun, 1988.</b>	Taiwan Line Seiki was established in Taipei, Taiwan.
<b>Aug, 1995.</b>	Line Seiki Philippines, Inc. was established in Cavite, the Philippines.
<b>Jun, 1999.</b>	Line Seiki Asia Pacific, Inc. was established in the Philippines.
<b>Jul, 2008.</b>	LS Instrumentation Sales & Services was established in Quezon City, the Philippines.

## MODELS



## SPECIFICATIONS

Type	GR2-C:Totalizer	GR2-H:Hourmeter
Display	7segment LCD 7digits 0.31inch [8mm] (H)	
No. of Digits	0 ~ 9999999	0.0 ~ 999999.9
Spec of Input	Max.Count Speed GR2-C 00 30Hz GR2-C 10 20Hz	Resolution 1 Count per 1/10 Hour

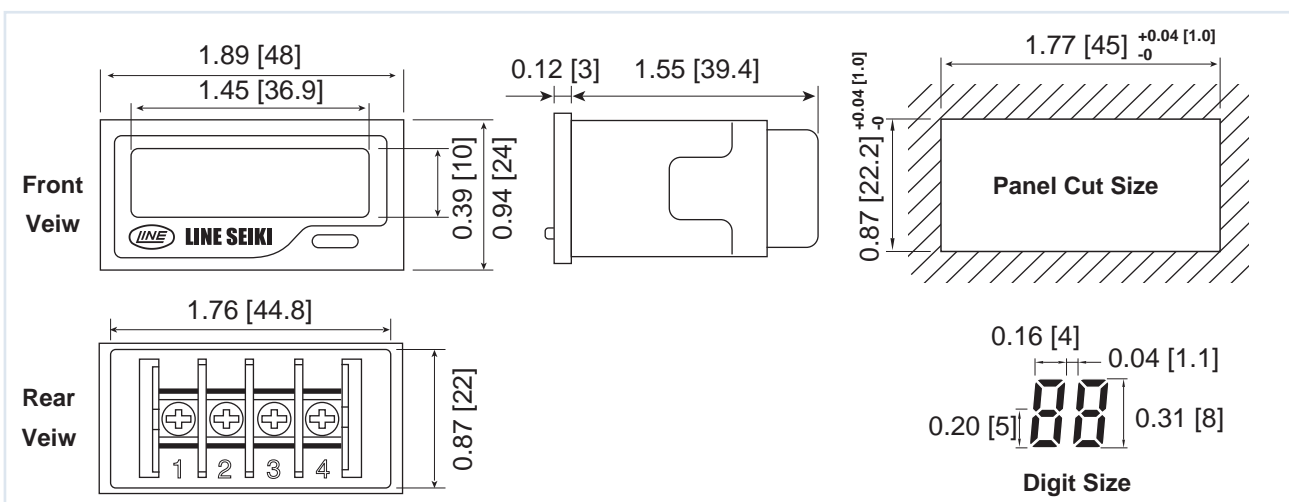
## MECHANICAL / ENVIRONMENTAL SPECIFICATIONS

Operating Temp.	14 ~ 131°F [-10 ~ 55 ](Non-freezing)
Storage Temp.	-4 ~ 149°F [-20 ~ 65 ](Non-freezing)
Operating Humidity	25 ~ 85%RH (Non-condensing)
Vibration / Shock Resistance	Operation : Double Amplitude 0.01 inch [0.3mm] Frequency 10 ~ 55Hz X.Y.Z. Axis 3.94in/s <sup>2</sup> [100mm/s <sup>2</sup> ] Storage : Double Amplitude 0.03 inch [0.75mm] Frequency 10 ~ 55Hz X.Y.Z. Axis 11.8in/s <sup>2</sup> [300mm/s <sup>2</sup> ]
Protection of Front Panel	IP54
Weight	1.8oz. [50g] (Battery Included)
Wiring	M3 Terminal Screw

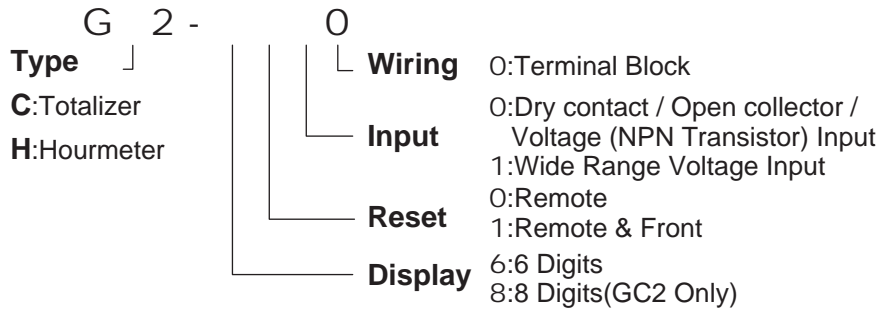
## ELECTRICAL SPECIFICATIONS

Input	Dry Contact / Open Collector / Voltage (NPN Transistor) L:<0.8VDC H:2 ~ 30VDC Wide Range Voltage L:0 ~ 10VDC/AC H:20 ~ 250VDC/AC	Sink Current : 8 μ A Input Impedance : 300k * 50/60 Hz Convertible
Reset	Front Reset Remote Reset Dry Contact / Open Collector / Voltage (NPN Transistor) L:<0.8VDC H:2 ~ 30VDC Wide Range Voltage L:0 ~ 10VDC/AC H:20 ~ 250VDC/AC	Sink Current : 8 μ A Input Impedance : 300k * 50/60 Hz Convertible
Reset Pulse Width	6ms MIN.	
Power Source	Lithium battery installed , Battery life 7 years (Replaceable)	
Compliance	CE, RoHS, UL	

## DIMENSIONS : inch [mm]



## MODELS



## SPECIFICATIONS

Type	GC2:Totalizer	GH2:Hourmeter
<b>Display</b>	7segment LCD 6 / 8digits 0.42inch [10.6mm] (H)	7segment LCD 6digits 0.43inch [10.8mm] (H)
<b>No. of Digits</b>	0 ~ 999999 / 0 ~ 99999999	0.0 ~ 99999.9
<b>Spec of Input</b>	Max.Count Speed G 2- 00 30Hz G 2- 10 20Hz	Resolution 1 Count per 1/10 Hour

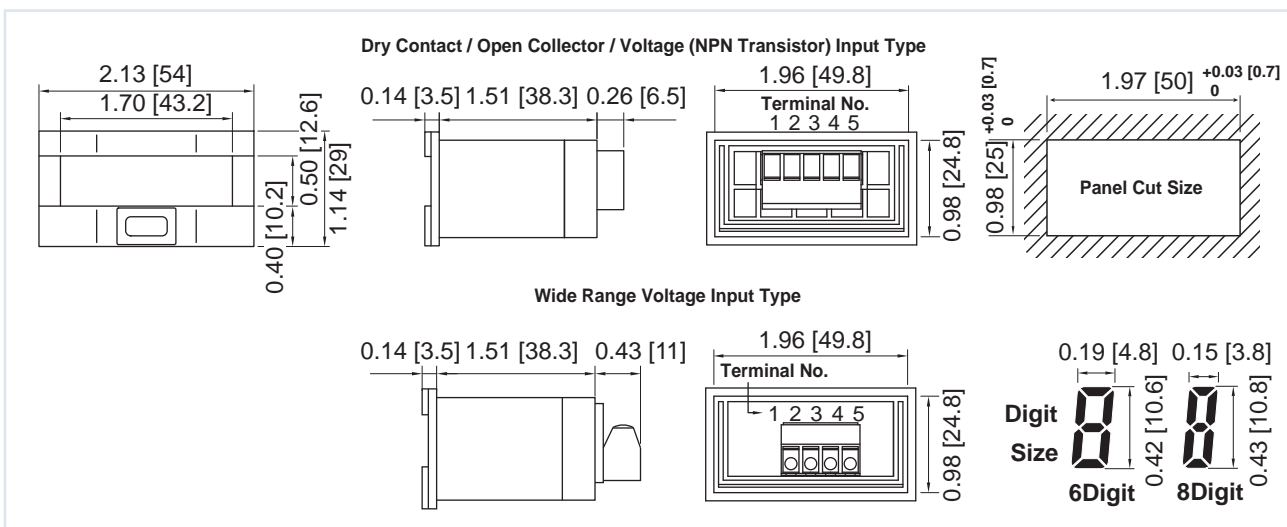
## MECHANICAL / ENVIRONMENTAL SPECIFICATIONS

<b>Operating Temp.</b>	14 ~ 131°F [-10 ~ 55°C ](Non-freezing)
<b>Storage Temp.</b>	-4 ~ 149°F [-20 ~ 65°C ](Non-freezing)
<b>Operating Humidity</b>	25 ~ 85%RH (Non-condensing)
<b>Vibration / Shock Resistance</b>	Operation : Double Amplitude 0.01 inch[0.3mm] Frequency 10 ~ 55Hz X.Y.Z. Axis 3.94in/s <sup>2</sup> [100mm/s <sup>2</sup> ] Storage : Double Amplitude 0.03 inch[0.75mm] Frequency 10 ~ 55Hz X.Y.Z. Axis 11.8in/s <sup>2</sup> [300mm/s <sup>2</sup> ]
<b>Protection of Front Panel</b>	IP54
<b>Weight</b>	2.1oz. [60g ] (Battery Included)
<b>Wiring</b>	Terminal type:14-22 AWG lead wires to be connected by screws.

## ELECTRICAL SPECIFICATIONS

<b>Input</b>	Dry Contact / Open Collector / Voltage (NPN Transistor) L:<0.8VDC H:2 ~ 30VDC Wide Range Voltage L:0 ~ 10VDC/AC H:20 ~ 250VDC/AC	Sink Current : 8 μ A Input Impedance : 300k * 50/60 Hz Convertible
<b>Reset</b>	Front Reset Remote Reset Dry Contact / Open Collector / Voltage (NPN Transistor) L:<0.8VDC H:2 ~ 30VDC Wide Range Voltage L:0 ~ 10VDC/AC H:20 ~ 250VDC/AC	Sink Current : 8 μ A Input Impedance : 300k * 50/60 Hz Convertible
<b>Reset Pulse Width</b>	6ms MIN.	
<b>Power Source</b>	Lithium battery installed , Battery life 7 years (Replaceable)	
<b>Compliance</b>	CE, RoHS, UL	

## DIMENSIONS : inch [mm]



## MODELS

E48 - 0

### Preset

- 1:1 Level Preset
- 2:2 Level Preset
- 3:1 Level Preset
- + Prewarn

### Power

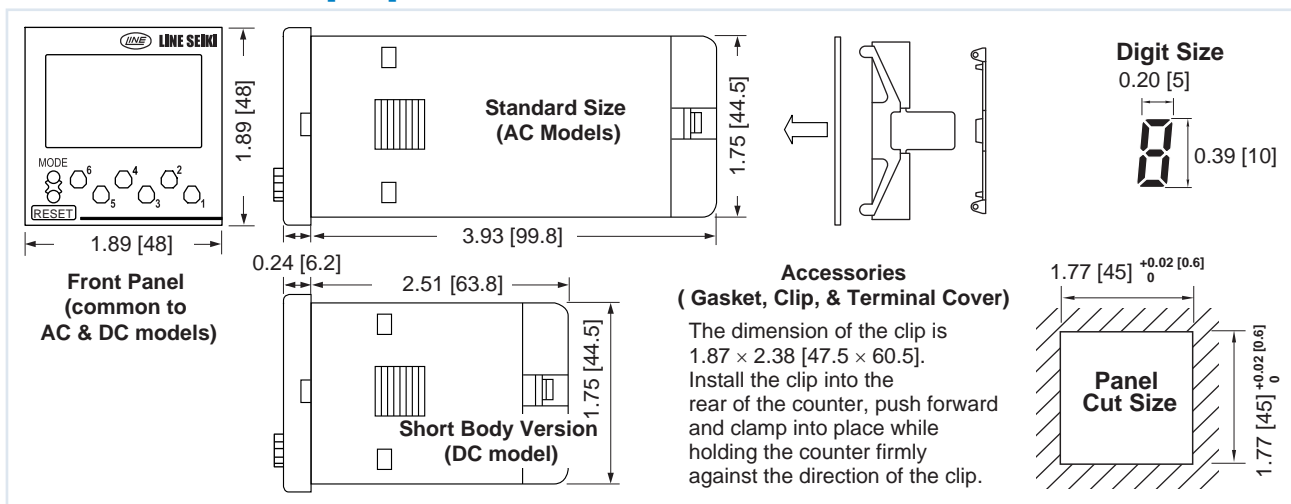
1:100~240VAC  
**Source** 2:12~24VDC(E48-102 only)



## SPECIFICATIONS

Model	E48-101	E48-102	E48-201	E48-301
<b>Display</b>	Blue STN LCD with white backlight ; Digit Size : 0.39 × 0.20inch [10 × 5mm]			
<b>No. of Digits</b>	6			
<b>No. of Digit Setting Keys</b>	6			
<b>Preset Level</b>	1 Level	1 Level	2 Level	1 Level Preset + Prewarn
<b>Setting Range</b>	-99999 ~ 999999			
<b>Prewarn Feature</b>	-	-	-	0~999999
<b>Input Mode</b>	Contact / Open Collector / Voltage (Selectable)			
<b>Input Signal</b>	Open Collector (Sink Current approx. 11mA) L : 0 ~ 4V / Voltage (Input Impedance 7KΩ) L : 0 ~ 4V H: 6 ~ 30V (Available to duplex wire DC sensor.)			
<b>Count Speed</b>	30Hz, 1kHz, 5kHz, 10kHz (Selectable)			
<b>Count Mode</b>	Add / Subtract (Add/Subtract individual input, 90° quadrature input)			
<b>Count Range</b>	-99999 ~ 999999			
<b>Prescale</b>	0.001 ~ 99.999 ( 0 setting is not available )			
<b>Decimal Point Position</b>	0.0, 0.00, 0.000, No Decimal Point			
<b>Write</b>	-99999 ~ 999999			
<b>Reset</b>	Front Panel Reset, Remote Reset , Auto-reset			
<b>Remote Reset Time</b>	2ms or 20ms ( Selectable )			
<b>Operation Mode</b>	Modes A, B, C, D, E, F, G can be selected. Except for standard output, Mode A only is available for other output modes.			
<b>Memory</b>	E <sup>2</sup> PROM ( 10 years, can be used 100,000 times )			
<b>Output</b>	Relay Output (Main: 1c, Sub: 1a) : load of 250VAC 5A / 30VDC 5A Maximum			
<b>Output Delay</b>	Relay Output /30Hz: 17ms MAX. ; 1kHz,5kHz,10kHz: 12ms MAX.			
<b>Output Mode</b>	1 Level Preset: Standard, Equal, Lower Limit, Upper Limit 2 Level Preset: Standard, Equal, Upper-Lower Limit, Upper-Upper Limit 1 Level Preset + Prewarn: Standard, Equal			
<b>Output Time</b>	Standard Output : One Shot (10 ~ 9990ms) or HOLD or HOLD 1 or HOLD 2 / Equal, Upper, Lower Output : Latched only when requirements are full			
<b>Error Display</b>	In 90° quadrature mode, error message will be displayed on the LCD if the count range is exceeded (overflow error : $\sigma-Er$ underflow error : $\mu-Er$ )			
<b>Power Supply</b>	100~240VAC -15%, +10% 50/60 Hz Convertible	12~24VDC -15%, +10%	100~240VAC -15%, +10%	50/60 Hz Convertible
<b>Sensor Power Source</b>	12VDC 100mA	-	12VDC 100mA	12VDC 100mA
<b>Power Consumption</b>	Approx. 7VA for 240VAC	Approx. 2.5W for 24VDC	Approx. 7VA for 240VAC	Approx. 7VA for 240VAC
<b>Operating Temperature</b>	14 ~ 122°F [-10 ~ 50°C] (Non-freezing) 45~85%RH (Non-condensing)			
<b>Altitude</b>	2,000m max.			
<b>Installation Environment</b>	Over-voltage Category II, Pollution Degree 2 (IEC61010-1)			
<b>Front Panel</b>	IP54 (Panel Surface)			
<b>Compliance</b>	CE, RoHS, UL in process			
<b>Weight</b>	5.6oz. [160g]	4.2oz. [120g]	5.6oz. [160g]	5.6oz. [160g]

## DIMENSIONS : inch [mm]



## MODELS

G48 - 3

**Preset** \_\_\_\_\_  
 0:1 Level Preset  
 1:2 Level Preset  
 2:1 Level Preset  
 + Prewarn

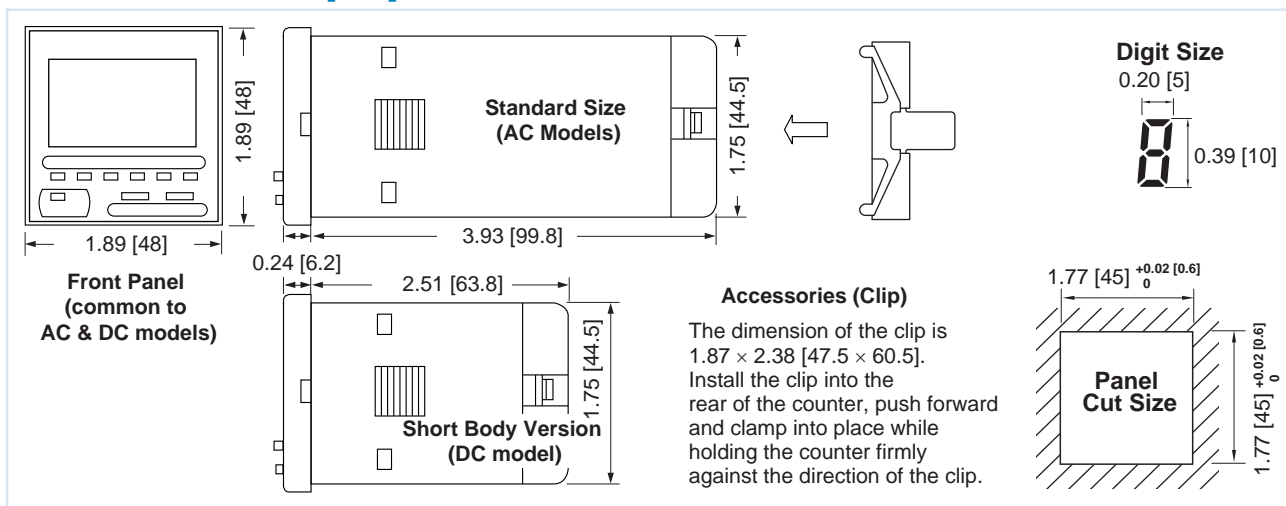
**Power Source** 5:100~240VAC  
 6:12~24VDC(G48-306 only)



## SPECIFICATIONS

Model	G48-305	G48-306	G48-315	G48-325
Display	LCD with backlight ; Digit Size : 0.39 × 0.20inch [10 × 5mm]			
No. of Digits	6			
No. of Digit Setting Keys	6			
Preset Level	1 Level	1 Level	2 Level	1 Level Preset + Prewarn
Setting Range	-99999 ~ 999999			
Prewarn Feature	-	-	-	0~999999
Input Mode	Contact / Open Collector / Voltage (Selectable)			
Input Signal	Open Collector (Sink Current approx. 10mA) L : 0 ~ 4V / Voltage (Input impedance 7KΩ) L : 0 ~ 4V H: 6 ~ 30V (Available to duplex wire DC sensor.)			
Count Speed	30Hz, 1kHz, 5kHz (Selectable)			
Count Mode	Add / Subtract (Add/Subtract individual input, 90° quadrature input)			
Count Range	-99999 ~ 999999			
Prescale	0.001 ~ 99.999 ( 0 setting is not available )			
Decimal Point Position	0.0, 0.00, 0.000, No Decimal Point			
Write	-99999 ~ 999999			
Reset	Front Panel Reset, Remote Reset , Auto-reset			
Remote Reset Time	2ms or 20ms ( Selectable )			
Operation Mode	Modes A, B, C, D, E, F, G can be selected. Except for standard output, Mode A only is available for other output modes.			
Memory	E <sup>2</sup> PROM ( 10 years, can be used 100,000 times )			
Output	Relay Output ( 1a ) : load of 250VAC 5A / 30VDC 5A Maximum			
Output Delay	Relay Output /30Hz: 20ms MAX. ; 1kHz,5kHz: 7ms MAX.			
Output Mode	1 Level Preset: Standard, Equal, Lower Limit, Upper Limit 2 Level Preset: Standard, Equal, Upper-Lower Limit, Upper-Upper Limit 1 Level Preset + Prewarn: Standard, Equal			
Output Time	Standard Output : One Shot (10 ~ 9990ms) or HOLD or HOLD 1 or HOLD 2 / Equal, Upper, Lower Output : Latched only when requirements are full			
Error Display	In Add/subtract mode, error message will be displayed on the LCD if the count range is exceeded (overflow error : $\alpha-Er$ underflow error : $\mu-Er$ )			
Key Lock	Key operation can be disabled at 4 protection levels (L1, L2, L3, L4) by selecting in Program Mode and shorting key lock terminals.			
Power Supply	100~240VAC -15%, +10% 50/60 Hz Convertible	12~24VDC -15%, +10%	100~240VAC -15%, +10% 50/60 Hz Convertible	12VDC 100mA
Sensor Power Source	12VDC 100mA	-	12VDC 100mA	-
Power Consumption	Approx. 7VA for 240VAC	Approx. 1.2W for 24VDC	Approx. 7VA for 240VAC	-
Operating Temperature	14 ~ 122°F [-10 ~ 50°C] (Non-freezing) 45~85%RH (Non-condensing)			
Front Panel	IP54 (Panel Surface)			
Compliance	CE			
Weight	6.0oz. [170g]	3.9oz. [110g]	6.0oz. [170g]	-

## DIMENSIONS : inch [mm]



## MODELS

MZ -

### Digit

6:6 digits

7:7 digits

### Voltage

12VDC

24VDC

### Mounting & Connection

00:Rear / Leadwire

20:Base (Horizontal) / Leadwire

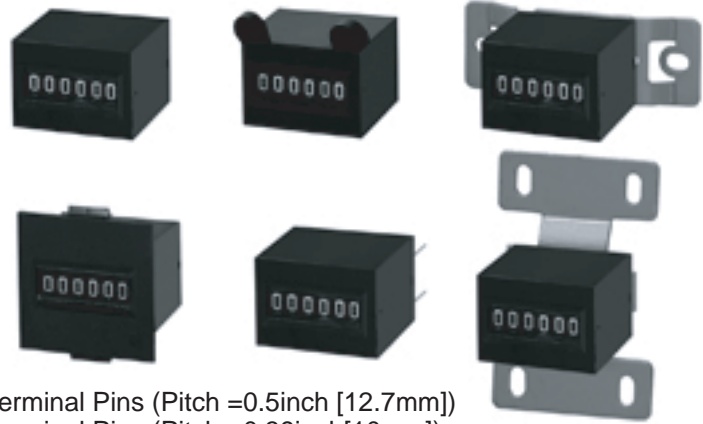
30:Behind Panel (Screw) / Leadwire

40:Base (Vertical) / Leadwire

70:Panel (Snap-in) / Leadwire

02:Rear (Mounting Pitch : 0.59inch [15mm]) / Terminal Pins (Pitch =0.5inch [12.7mm])

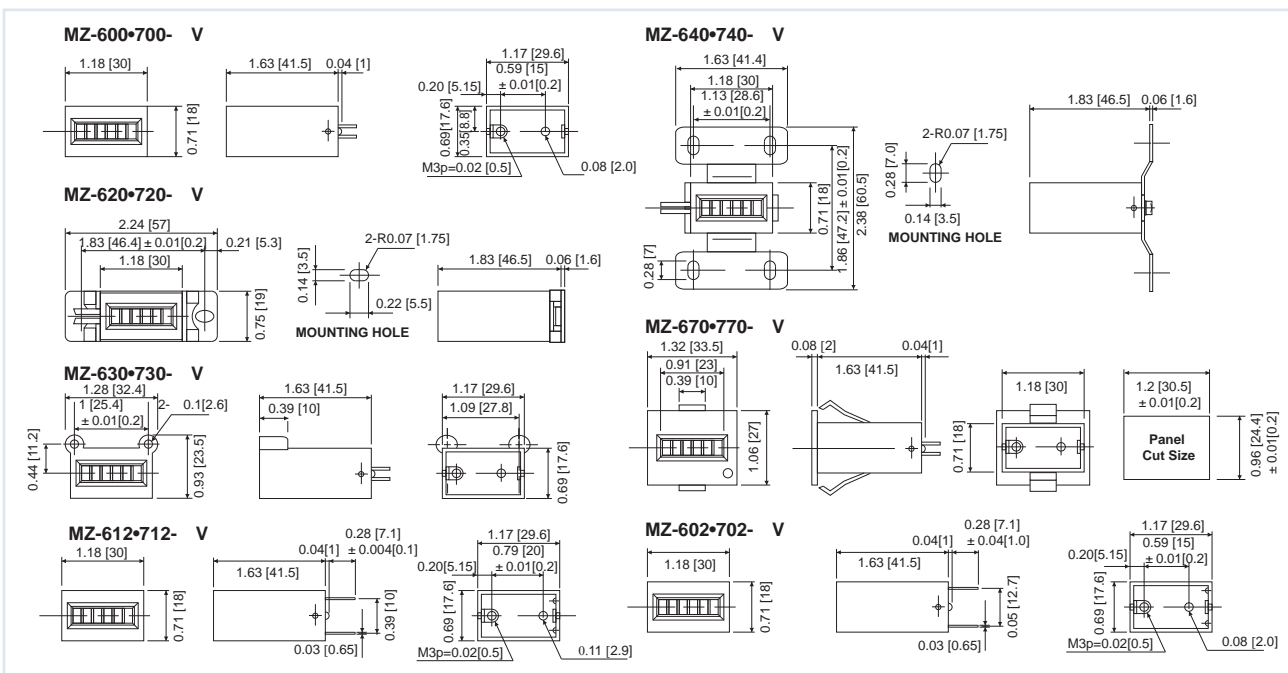
12:Rear (Mounting Pitch : 0.79inch [20mm]) / Terminal Pins (Pitch =0.39inch[10mm])



## SPECIFICATIONS

<b>Display</b>	6digits : 0.12 × 0.08inch [3.0 × 2.0mm] / 7digits : 0.12 × 0.06 [3.0 × 1.6] (white on black background)
<b>Power Source</b>	12VDC, 24VDC
<b>Voltage Fluctuation</b>	-15% ~ +10%
<b>Power Consumption</b>	1.2W
<b>Continuous Energizing</b>	Permissible
<b>Counting Method</b>	One Pulse - One Count (Energizing - ½ count, Unenergized - ½ count)
<b>Counting Speed</b>	10Hz, 20Hz (Maximum)
<b>Pulse Width</b>	50ms (Minimum)
<b>Make (Duty)</b>	1 : 1
<b>Count Life</b>	6digits : 3,000,000 Counts Minimum / 7digits : 10,000,000 Counts Minimum
<b>Reset</b>	None
<b>Connection</b>	Lead Wire / PCB Type : Pin
<b>Operating Humidity</b>	23 ~ 104°F [-5 ~ +40°C] (Non-freezing)
<b>Operating Temperature</b>	85%RH Maximum (Non-condensing)
<b>Test Voltage</b>	1,500VAC for 1 Minute
<b>Insulation Resistance</b>	50MΩ Minimum (500VDC Megger)
<b>Vibration</b>	Endurance : 16.7 Hz, Width : Double Amplitude 0.16inch (4mm) Mismovement : 10 ~ 55 Hz, Width : Double Amplitude 0.02inch(0.5mm)
<b>Shock</b>	Endurance : 30G Mismovement : 5G
<b>Construction</b>	Cover : Plastic (Noryl UL94V-1,Black) / Base: Steel
<b>Weight</b>	1.06oz. [30g]
<b>Compliance</b>	CE, RoHS, UL

## DIMENSIONS : inch [mm]



## MODELS

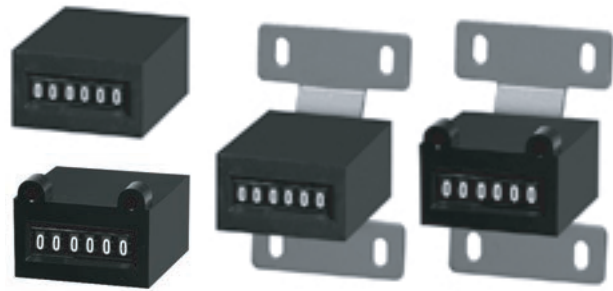
ME - 60 OUL - -

**Digit**  
6:6 digits

**Voltage**  
115VAC  
24VDC

**Accessory**  
Blank:None  
B1:with Base Plate

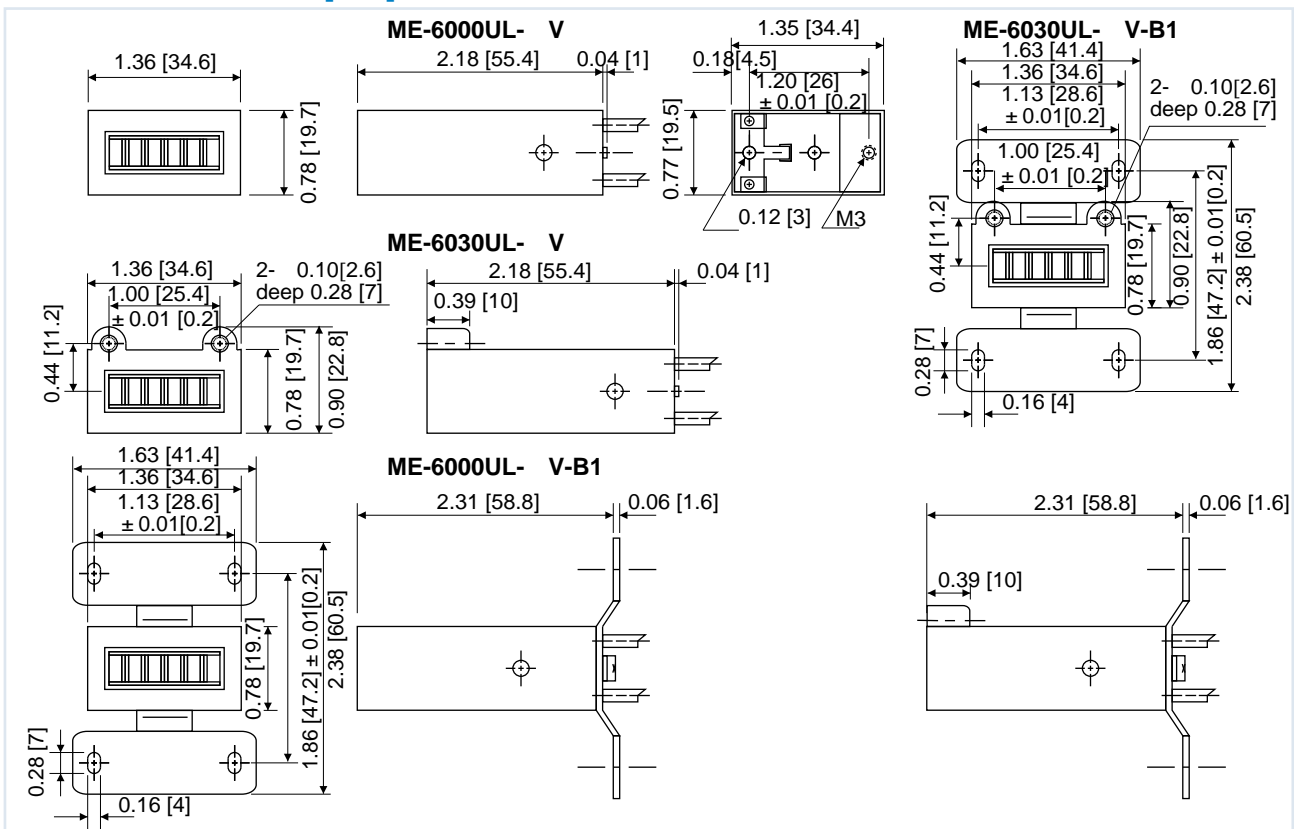
**Mounting**  
0:Rear  
3:Behind Panel (Screw)



## SPECIFICATIONS

<b>Display</b>	0.14 × 0.07inch [3.5 × 1.8mm] (white on black background)
<b>Power Source</b>	115VAC 50/60 Hz Convertible / 24VDC
<b>Voltage Fluctuation</b>	-15% ~ +10%
<b>Power Consumption</b>	1.1 VAAC / 1.2WDC
<b>Continuous Energizing</b>	Permissible
<b>Counting Method</b>	One Pulse - One Count (Energizing - ½ count, Unenergized - ½ count )
<b>Counting Speed</b>	10Hz (Maximum)
<b>Pulse Width</b>	50ms (Minimum)
<b>Make (Duty)</b>	1 : 1
<b>Count Life</b>	3,000,000 Counts Minimum
<b>Reset</b>	None
<b>Connection</b>	Lead Wire
<b>Operating Humidity</b>	23 ~ 104°F [-5 ~ +40°C] (Non-freezing)
<b>Operating Temperature</b>	85%RH Maximum (Non-condensing)
<b>Test Voltage</b>	1,500VAC for 1 Minute
<b>Insulation Resistance</b>	50MΩ Minimum (500VDC Megger)
<b>Vibration</b>	Endurance : 16.7 Hz, Width, Double Amplitude 0.16inch [4mm] Mismovement : 10 ~ 55 Hz, Double Amplitude 0.02inch [0.5mm]
<b>Shock</b>	Endurance : 30G / Mismovement : 5G
<b>Construction</b>	Cover : Plastic (Noryl UL94V-1,Black) / Base: Steel
<b>Weight</b>	ME-6000UL- V : 1.69oz.[50g], ME-6000UL- V-B1 : 2.03oz.[60g], ME-6030UL- V : 1.76oz.[52g], ME-6030UL- V-B1 : 2.10oz.[62g]
<b>Compliance</b>	CE in process, RoHS, UL

## DIMENSIONS : inch [mm]





## MODELS

MCU - 6 UL - -

Digit

6:6 digits

Mounting

S:Rear

P:Panel

(Screw)

Voltage

115VAC

24VDC

Accessory

Blank:None

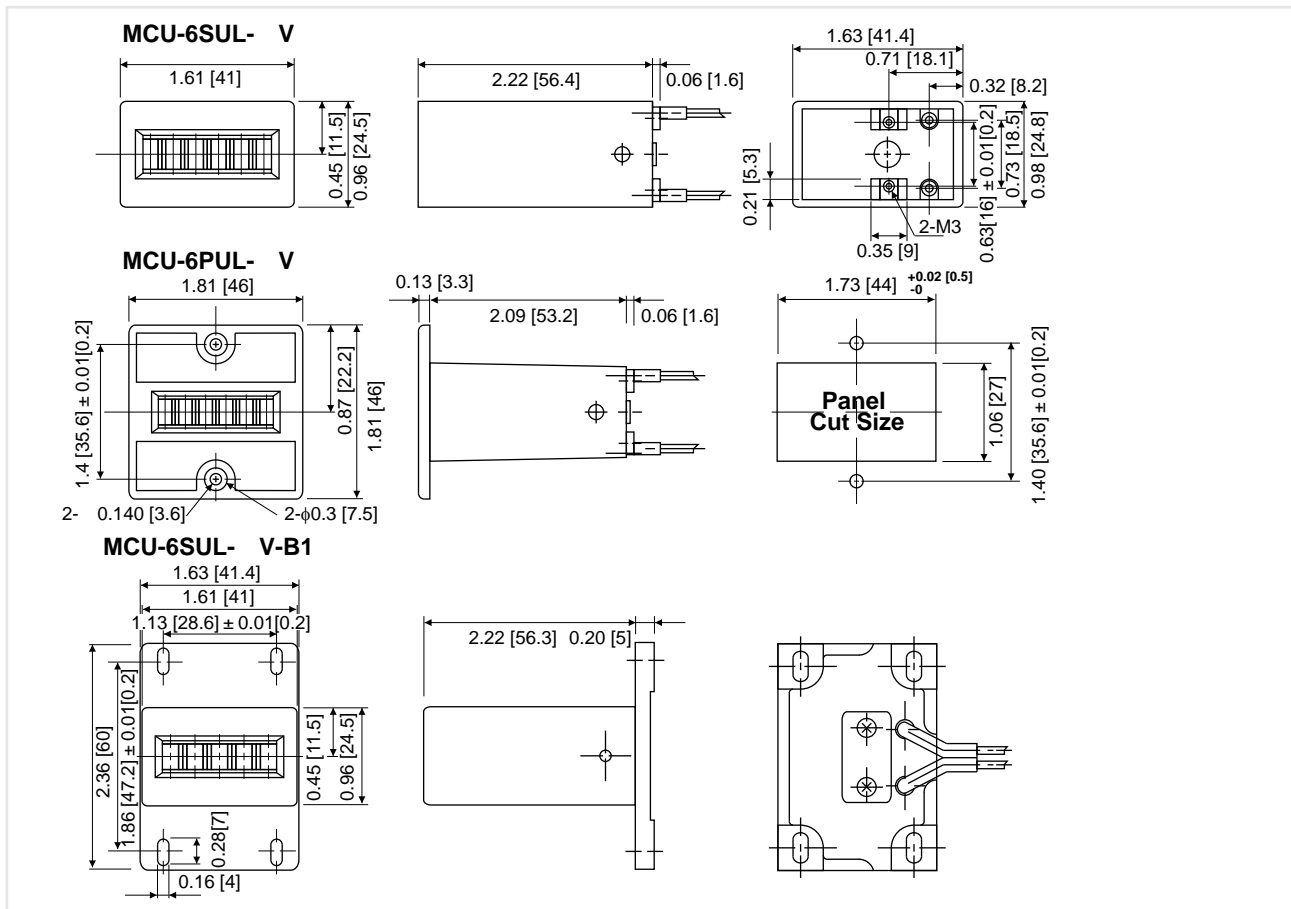
B1:with Base Plate  
(only S Type)



## SPECIFICATIONS

<b>Display</b>	0.17 × 0.10inch [4.3 × 2.6mm] (white on black background)
<b>Power Source</b>	115VAC 50/60 Hz Convertible / 24VDC
<b>Voltage Fluctuation</b>	±10%
<b>Power Consumption</b>	2.3 ~ 4.2VAAC / 1.7 ~ 2.3WDC
<b>Continuous Energizing</b>	AC : less than 5 minutes / DC : Permissible
<b>Counting Method</b>	One Pulse - One Count (Energizing - ½ count, Unenergized - ½ count )
<b>Counting Speed</b>	10Hz (Maximum)
<b>Pulse Width</b>	50ms (Minimum)
<b>Make (Duty)</b>	1 : 1
<b>Count Life</b>	10,000,000 Counts Minimum
<b>Reset</b>	None
<b>Connection</b>	Lead Wire 9.84inch [250mm]
<b>Operating Humidity</b>	23 ~ 104°F [-5 ~ +40°C] (Non-freezing)
<b>Operating Temperature</b>	85%RH Maximum (Non-condensing)
<b>Test Voltage</b>	1,500VAC for 1 Minute
<b>Insulation Resistance</b>	50MΩ Minimum (500VDC Megger)
<b>Vibration</b>	Endurance : 16.7 Hz, Width, Double Amplitude 0.16inch [4mm] Mismovement : 10 ~ 55 Hz, Double Amplitude 0.02inch [0.5mm]
<b>Shock</b>	Endurance : 30G / Mismovement : 5G
<b>Construction</b>	Cover : Plastic (Noryl UL94V-1,Black) / Base: Plastic
<b>Weight</b>	MCU-6SUL- V : 2.87oz. [85g], MCU-6PUL- V : 3.38oz. [100g], MCU-6SUL- V-B1 : 3.70oz. [105g]
<b>Compliance</b>	CE in process, RoHS, UL

## DIMENSIONS : inch [mm]



## MODELS

MCF - XUL -

Digit |  
 4:4 digits |  
 6:6 digits |

Voltage 115VAC  
 24VDC

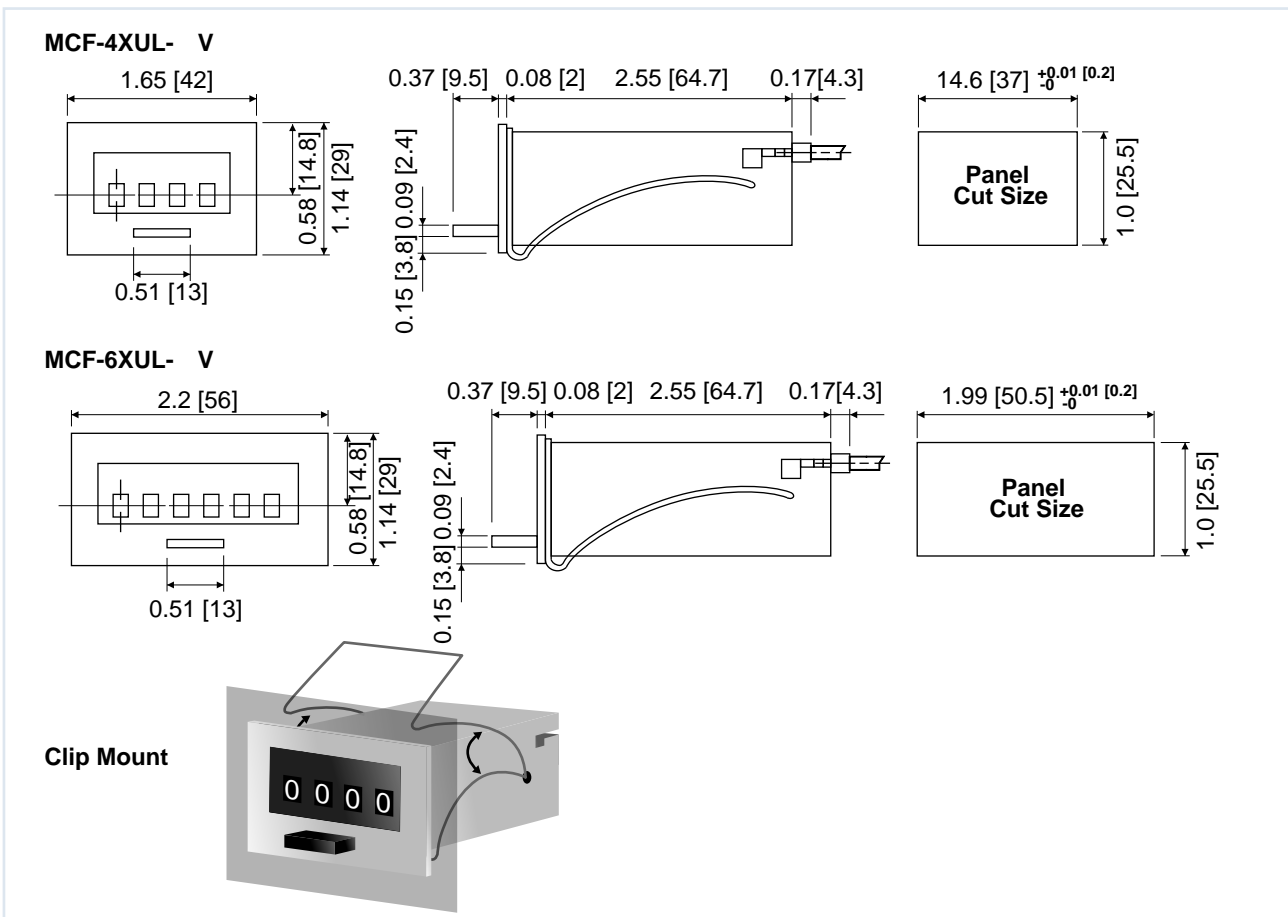
Mounting X:Panel (Clip)







## SPECIFICATIONS

<b>Display</b>	0.16 × 0.09inch [4.0 × 2.4mm] (white on black background)
<b>Power Source</b>	115VAC 50/60 Hz Convertible / 24VDC
<b>Voltage Fluctuation</b>	-15% ~ +10%
<b>Power Consumption</b>	3 ~ 4VAAC / 2 ~ 3WDC
<b>Continuous Energizing</b>	Permissible
<b>Counting Method</b>	One Pulse - One Count (Energizing - ½ count, Unenergized - ½ count )
<b>Counting Speed</b>	10Hz (Maximum)
<b>Pulse Width</b>	50ms (Minimum)
<b>Make (Duty)</b>	1 : 1
<b>Count Life</b>	10,000,000 Counts Minimum
<b>Reset</b>	Manual Reset (Push Button)
<b>Connection</b>	Lead Wire 9.84inch [250mm]
<b>Operating Humidity</b>	23 ~ 104°F [-5 ~ +40°C] (Non-freezing)
<b>Operating Temperature</b>	85%RH Maximum (Non-condensing)
<b>Test Voltage</b>	1,500VAC for 1 Minute
<b>Insulation Resistance</b>	50MΩ Minimum (500VDC Megger)
<b>Vibration</b>	Endurance : 16.7 Hz, Double Amplitude 0.16inch [4mm] Mismovement : 10 ~ 55 Hz, Double Amplitude 0.02inch [0.5mm]
<b>Shock</b>	Endurance : 30G / Mismovement : 5G
<b>Construction</b>	Cover : Plastic (Noryl UL94V-1,Gray)
<b>Weight</b>	MCF-4XUL- V : 3.38oz. [100g], MCF-6XUL- V : 4.06oz. [120g]
<b>Compliance</b>	CE in process, RoHS, UL

## DIMENSIONS : inch [mm]



## MODELS

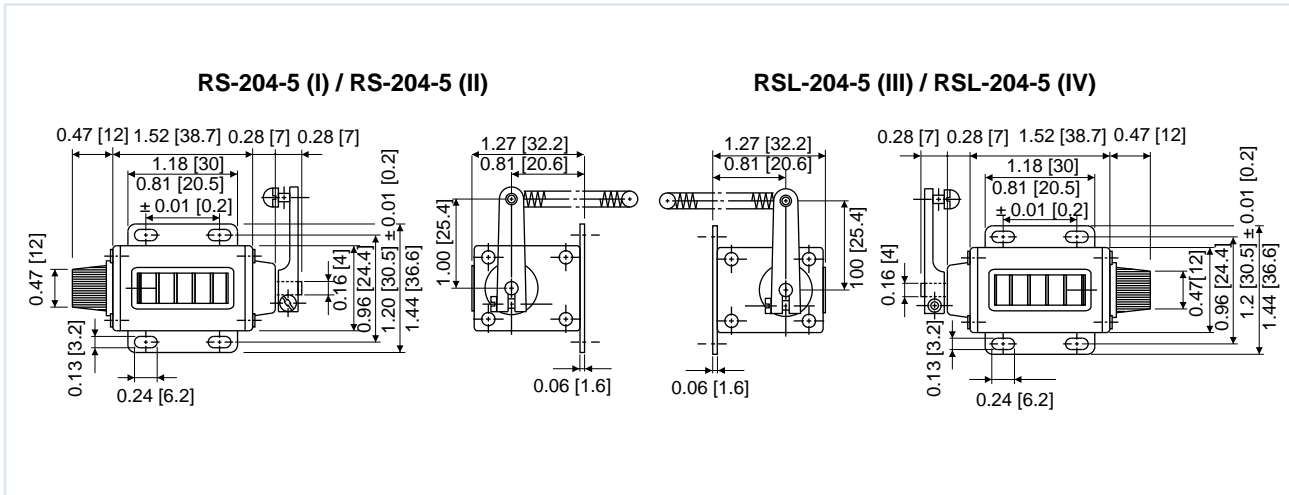
	Type (I)	Type (II)	Type (III)	Type (IV)
<b>Models</b>	RS-204-5(I)	RS-204-5(II)	RS-204-5(III)	RS-204-5(IV)
<b>Rotation</b>				
	Right Shaft Top-going	Right Shaft Top-coming	Left Shaft Top-going	Left Shaft Top-coming



## SPECIFICATIONS

<b>Type</b>	Ratchet : Adds 1 count for each 40°~ 45° actuation of lever.
<b>Digits</b>	5
<b>Figures</b>	0.19 × 0.09inch [4.8 × 2.4mm]
<b>Count Speed</b>	200 ~ 500 Counts / Minute
<b>Measuring Range</b>	0 ~ 99999
<b>Reset</b>	Rotary Knob
<b>Weight</b>	Approx. 2.12oz. [60g]
<b>Operating Temperature</b>	23 ~ 104°F [-5 ~ +40°C] (Non-freezing)
<b>Operating Humidity</b>	85%RH Maximum (Non-condensing)
<b>Compliance</b>	RoHS

## DIMENSIONS : inch [mm]



## MECHANICAL COUNTER OPERATION

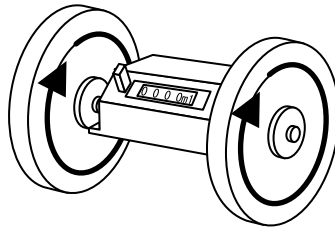
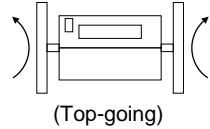
Adds 1 count for each 40°~ 45° actuation of lever



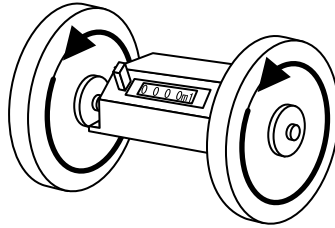
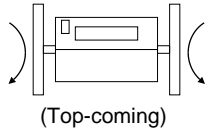
## MODELS

### RY Series

RY1-3:10-5 (I)  
RY1-3:100-5 (I)

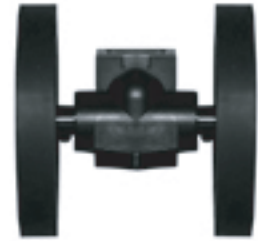
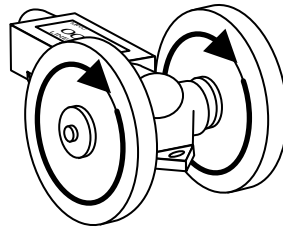
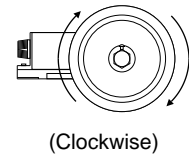


RY1-3:10-5 (II)  
RY1-3:100-5 (II)



### MWC Series

MWC-3:1-5 (I)  
MWC-3:10-5 (I)



## SPECIFICATIONS

Models	Figures	Rotations for Additive	Unit of Measurements	Maximum Count Speed	Torque	Weight
RY1-3:10-5 (I)-YDP	5	Top-going	0.1 yard	300 yard/min	2.08ozf-in [150gcm]	26oz.[730g]
RY1-3:10-5 (II)-YDP	5	Top-coming	0.1 yard	300 yard/min	2.08ozf-in [150gcm]	26oz.[730g]
RY1-3:100-5 (I)-YDP	5	Top-going	0.01 yard	30 yard/min	3.47ozf-in [250gcm]	26oz.[730g]
RY1-3:100-5 (II)-YDP	5	Top-coming	0.01 yard	30 yard/min	3.47ozf-in [250gcm]	26oz.[730g]
MWC-3:1-5 (I)-YP	5	Clockwise	1 yard	300 yard/min	2.08ozf-in [150gcm]	19oz.[545g]
MWC-3:10-5 (I)-YP	5	Clockwise	0.1 yard	30 yard/min	2.08ozf-in [150gcm]	19oz.[545g]

2 pieces of wheels are furnished as standard accessories. Please pay attention to the copy products in the market.

### Color of Figure

RY1-3:10-5 (I)-YDP



RY1-3:10-5 (II)-YDP

First figure is Yellow on Black background.  
Others are White on Black background.

RY1-3:100-5 (I)-YDP



RY1-3:100-5 (II)-YDP

First and second figure are Yellow on Black background.  
Others are White on Black background.

MWC-3:1-5 (I)-YP



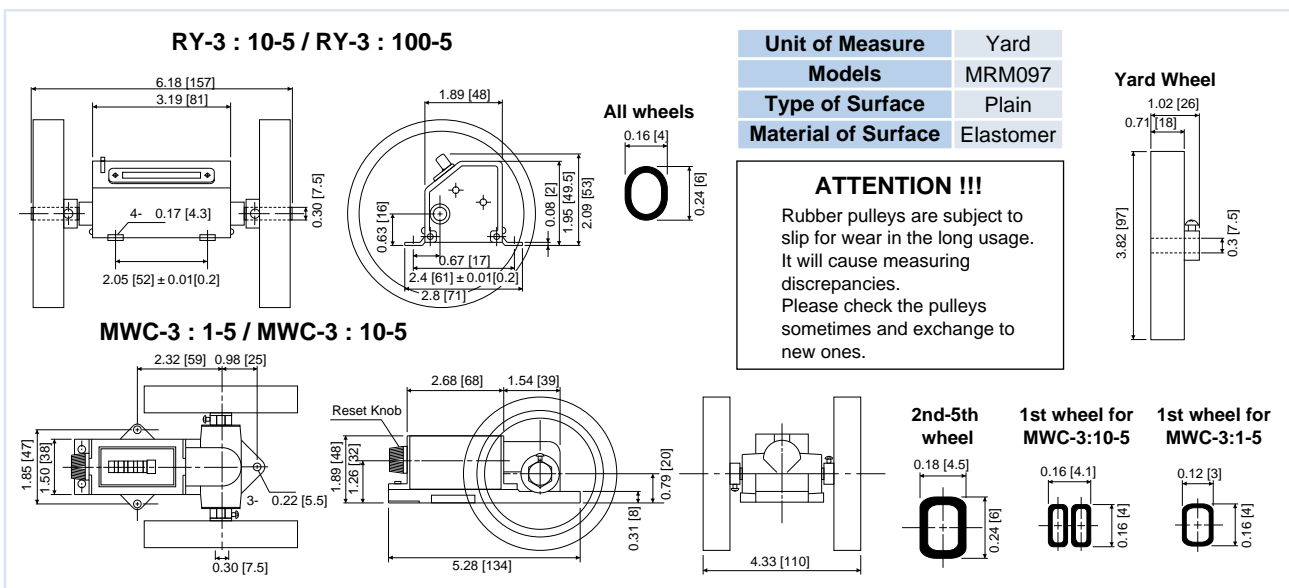
MWC-3:10-5 (I)-YP



All figures are White on Black background.

**Operating Temperature** 23~104°F [-5~+40°C] **Operating Humidity** 85%RH Maximum **Remarks** Non-Freezing, Non-Condensing

## DIMENSIONS : inch [mm]



## MODELS

Models	Sensor	Unit of Measurements	Maximum Count Speed	Weight	Torque	Proper Counter
CT1-3:1-YP	Microswitch	1 yard	240 yard/min	25oz. [700g]	2.12ozf-in [153gcm]	Electronic Counter
CT1-3:10-YP		0.1 yard	24 yard/min	25oz. [710g]		
CT1-3:1A-YP	Photoelectronic Sensor, 1 Non-contact Output	1 yard	700 yard/min	26oz. [730g]		Electronic Counter
CT1-3:10A-YP		0.1 yard	500 yard/min	26oz. [730g]		
CT1-3:100A-YP		0.01 yard	250 yard/min	26oz. [740g]		
CT1-3:1000A-YP		0.001 yard	100 yard/min	28oz. [790g]		
CT1-3:1R-YP	Photoelectronic Sensor, 2 Non-contact Outputs (90° Quadrature Output)	1 yard	700 yard/min	26oz. [740g]		Bidirectional Electronic Counter
CT1-3:10R-YP		0.1 yard	500 yard/min	26oz. [740g]		
CT1-3:100R-YP		0.01 yard	250 yard/min	26oz. [750g]		
CT1-3:1000R-YP		0.001 yard	100 yard/min	28oz. [780g]		

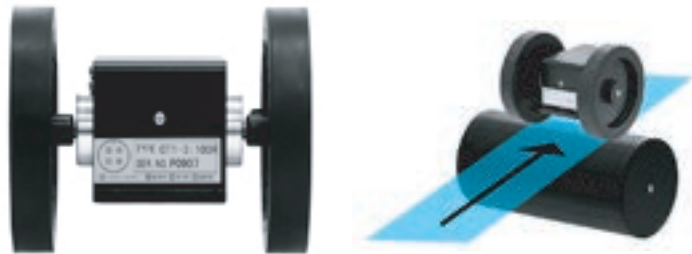
Factory-installed Option : Open collector output is available in 1 and 2 non-contact outputs models.  
"C" should be added to the model number. ( Ex. ) CT1-3:10AC-YP

## SPECIFICATIONS

Models	Output	Power Source	Current Consumption	Output Impedance	Maximum Load Current
CT1-3:1/10-YP	1 Output	Microswitch Contact output, Capacity : 250VAC 10A , 125VDC 0.5A (Load)			
CT1-3:1/10/100A-YP	1 Output	5 ~ 24VDC ± 10%	35mA	3.9K	100mA
CT1-3:1000A-YP	1 Output	5 ~ 12VDC ± 10%	20mA	2K	20mA
CT1-3:1/10/100R-YP	2 Outputs (90 ° Quadrature)	5 ~ 24VDC ± 10%	70mA	3.9K	100mA
CT1-3:1000R-YP	2 Outputs (90 ° Quadrature)	5 ~ 12VDC ± 10%	40mA	2K	20mA

2 pieces of wheels are furnished as standard accessories. When you order, please specify type of wheels (meter or yard).  
Please pay attention to the copy products in the market.

Operating Temperature	14 ~ 122°F [-10 ~ +50°C]
Operating Humidity	35~ 85%RH Maximum
Remarks	Non-Freezing, Non-Condensing
Compliance	CE in process



## DIMENSIONS : inch [mm]

### CT1-3:1/10-YP

Dimensions: 3.37 [85.5], 2.40 [61], 3.94 [100], 0.30 [7.5], 0.20 [5], 4-0.20 [5] Mounting Holes, 0.98 [25], 3.74 [95] ± 0.02 [0.5], 4.13 [105], 1.26 [32], 0.28 [7], 1.85 [47] ± 0.02 [0.5], 2.24 [57], 5.12 [130], 1.18 [30]

### WHEEL

Unit of Measure	Models	Type of Surface	Material of Surface
Yard	MRM097	Plain	Elastomer

Rubber pulleys are subject to slip for wear in the long usage. It will cause measuring discrepancies. Please check the pulleys sometimes and exchange to new ones.

### CT1-3:1/10/100/1000A(C)-YP

Dimensions: 3.37 [85.5], 2.40 [61], 0.30 [7.5], 0.20 [5], 4-0.20 [5] Mounting Holes, 0.98 [25], 3.74 [95] ± 0.02 [0.5], 4.13 [105], 1.26 [32], 0.28 [7], 0.71 [18], 1.85 [47] ± 0.02 [0.5], 2.24 [57], 5.12 [130], 1.18 [30]

### Yard Wheel

Dimensions: 1.02 [26], 0.71 [18], 38.2 [97] +0.01 [0.3], 0.3 [7.5]

## MODELS

Model	Type	Accessory
<b>TM-7000K2</b>	<b>Basic Laser Type</b>	TM-7000 Main Unit
	Non Contact Measuring	Contact Adaptor
<b>TM-7010EK</b>	<b>Advanced Laser Type</b>	TM-7010E Main Unit
	Non Contact Measuring	Contact Adaptor
<b>TM-7020K2</b>	<b>Contact type</b>	TM-7020 Main Unit
	Contact Measuring Only	

ZTM051 (Reflective Tape, 10pcs.)
ZTM004-SET (Rubber Tip, 3pcs.)
ZM4052 (Surface Speed Wheel (1/10 m) 1pc.)
C-7000 (Carrying Case)
AAA Alkaline Battery, 4pcs.
Instruction Manual
ZM4053 (Surface Speed Wheel (1/10 y) 1pc.)
* TM-7000K2 only
ZTM004-SET (Rubber Tip, 3pcs.)
ZM4052 (Surface Speed Wheel (1/10 m) 1pc.)
ZM4053 (Surface Speed Wheel (1/10 y) 1pc.)
C-7020 (Carrying Case)
AAA Alkaline Battery, 4pcs. Instruction Manual



## SPECIFICATIONS(Main Unit)

Model	TM - 7000	TM - 7010E	TM-7020	Model	TM - 7000	TM - 7010E	TM-7020	
<b>Measuring Range (Non Contact)</b>	6.0~99999.9r/min	6.0~99999.9r/min	Prescale	-	After 3 minutes from last measurement or key operation			
<b>Measuring Range (TM-7000/7010/7010E with Contact Adaptor)</b>	6.0~15000.0r/min	0.10~1666.66r/sec	Mode	1.0~6000.0r/min	Measurement Data : until the next data is defined			
		0.10~250.00 r/sec	0.1 ~		Time		-	Memory Data : same as battery life
<b>Resolution</b>	0.1 r/min	0.60~1500.00 m/min	0.01 ~	1.0~2.0 Seconds	<b>Measuring Method</b>			
		1.00~2500.00 cm/sec	99999.9/min		Non-contact Measurement : Using Main Unit (with Reflective Tape)		Contact Type Measurement : Using Main Unit (with Rubber Tip or) (Surface Speed Wheel)	
<b>Accuracy</b>	± 0.01% ± 1 digit	0.65~1640.41 y/min	0.01 ~	1.0~2.0 Seconds	<b>Optical System (Except TM-7020)</b>			
		0.39~ 984.25 in/sec	9999.99/sec		Light Source : Laser, Class 2		Operating Range : 1.97 ~ 39.4inch [50 ~ 1000mm], ± 40degrees	
<b>Sampling Time</b>	1.0~10.0 Seconds	1.9~4921.25 f/min	9999.99/sec	1.0~2.0 Seconds	Wavelength : 650 nm , CW			
		(1.0~2.0 Seconds, with Contact Adaptor)			Power Output : Max. 1 mW			
<b>Display</b>	Measurement Display : 6digits, 7segment LCD Laser On  :mark			<b>Power Supply</b>	AAA Alkaline Battery, 4pcs.			
	Low-battery  :mark		Contact Measurement  :mark		<b>Battery Life with Continuous Measurement</b>	approx. 30 Hours	approx.15 Hours	approx. 30 Hours
	On Target  :mark		(  Except TM-7020)			<b>Backlight</b>	Blue (Auto-Backlight Off after 10 seconds of inactivity)	
	Display Unit : /min		Display Unit:/min, /sec, m/min		Operating Temp./Humid.		41 ~ 104°F [5 ~ +40°C] (Non-Freezing) 35 ~ 85%RH (Non-Condensing)	
<b>Prescale Range</b>	-	cm/sec, y/min, in/sec, f/min	Display Unit : /min	-	Storage Temp.			
		Memory Display:MEM1~25, MAX, MIN	Prescale Mode Indicator :PS		Dimension/Weight (Battery Included)		4.92inch [125mm](H) x 2.28inch [58mm](W) x 1.08inch [27.4mm](D) / 4.9oz. [140g]	
-		0.001 ~ 999.999	-	<b>Compliance</b>		CE, RoHS		

## DIMENSIONS

**TM-7000 (Laser)**

**TM-7010E (Laser)**

**TM-7020 (Rotating shaft)**

**Contact Adaptor (Rotating shaft)**

**OPTION**

- ZTM051**  
Reflective Tape, 10pcs.
- ZTM004-SET**  
Rubber Tip, 3pcs.
- ZM4052**  
Surface Speed Wheel (1/10 m), 1 pc.
- ZM4053**  
Surface Speed Wheel (1/10 y), 1 pc.

*Image for illustrative purposes only*

① Photoelectric Part

② Displays and Indicators

②a Measurement Display

②b Prescale Setting Indicator

②c Unit Display

②d Low-battery Indicator

②e Contact Measurement Indicator

②f Memory Number & MAX-MIN Display

②g Laser On Indicator

②h On Target Indicator

③ Measurement Button

④ Key Switches

④a Enter Key

④b Memory Call Key

④c Clear Key

④d Linear/Surface Speed Key (Unit Selection Key)

④e Rotational Speed Key (Unit Selection Key)

④f Measurement Mode Key

⑤ Contact Adaptor

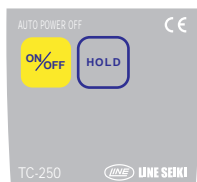
⑤a Rubber Tip

⑤b Surface Speed Wheel

## MODELS

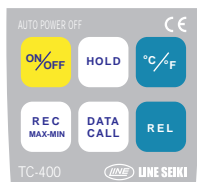
### TC-250 (Basic type)

- 1.Auto Power-off
- 2.Data Hold



### TC-400 (Advanced type)

- 1.°C / °F(Selectable)
- 2.Auto Power-off
- 3.Data Hold
- 4.Data Record (MAX / MIN / Memory)
- 5.Relative Measurement



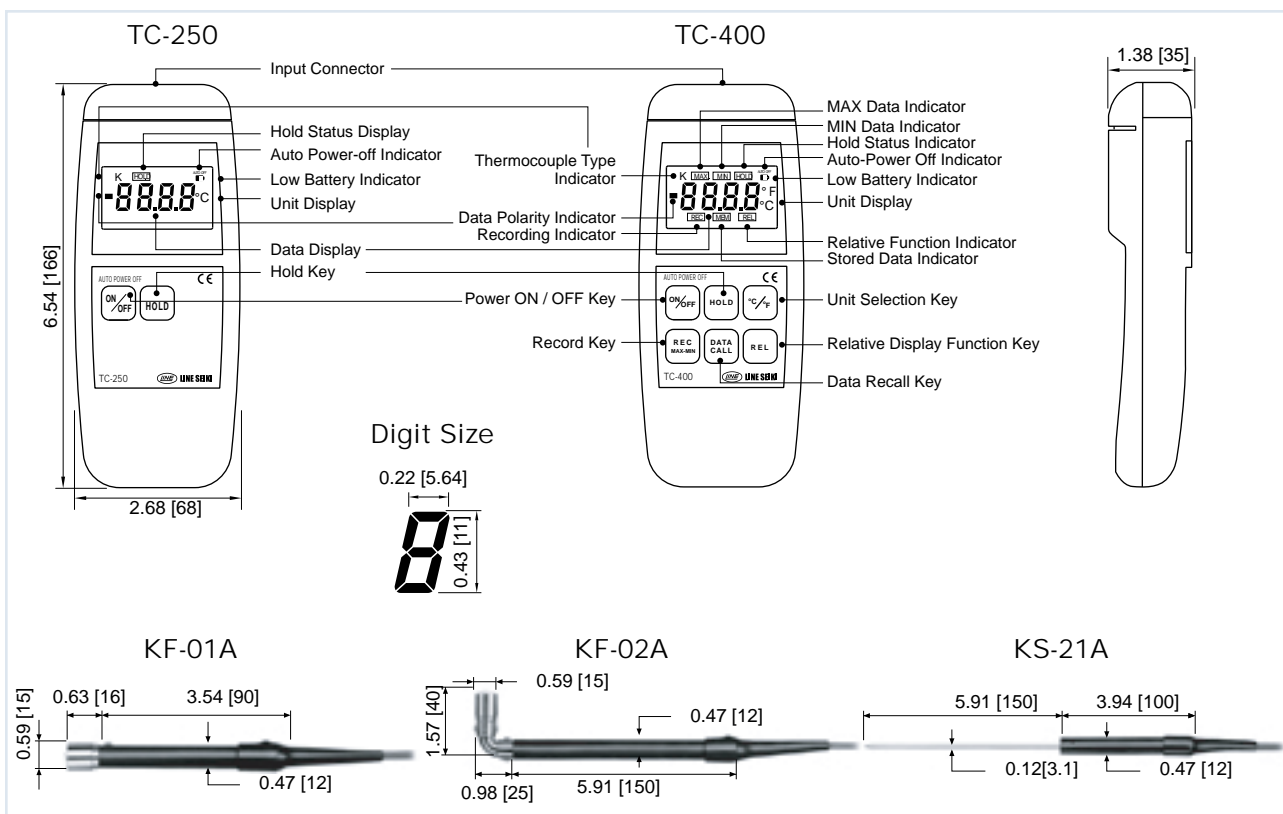
## SPECIFICATIONS

Model	TC-250	TC-400
<b>Sensor Type</b>	Type K	
<b>Measuring Range</b>	-160°C (-256°F) ~ +1,372°C(+ 2,502°F)	
<b>Resolution</b>	Automatic +199.9°C(+391.8°F) or less : 0.1°C (0.2°F) +200°C(+392°F) or more : 1 ( 1°F)	
<b>Accuracy</b> at Ambient Temp. 25°C(77°F) ± 5°C(41°F)	0 °C ( 32°F) ~ + 199.9 °C (391.8°F) ± : 0.1 % of reading +0.7 °C(1.3°F) -0.1°C (31.8°F) or less, +200 °C( +392°F) or more : ± 0.2% of reading +1°C ( 1.8°F)	
<b>Temperature Coefficient</b>	± 0.015% of reading + 0.06°C( 0.108°F) / °C(1.8°F)	
<b>Sampling Time</b>	Approx. 1.2 sec.	
<b>Operation Function</b>	Auto Power-off, Data Hold	°C / °F(Selectable), Auto Power-Off, Data Hold, Data Record(MAX / MIN / Memory), Relative Measurement
<b>Operating Temp. / Humidity</b>	0 ~ 50°C (32 ~ 122°F) 0 ~ 90%RH at 0 ~ 35°C(32 ~ 95°F)	
<b>Power Supply</b>	Battery 006P (9V)	
<b>Battery life</b>	Approx. 500 Hours	
<b>Weight</b>	Approx. 6.8oz. [200g]	
<b>Sensor Connector</b>	Thermocouple Connector	
<b>Accessories</b>	Instruction Manual, Battery 006P, 1pc.	
<b>Compliance</b>	CE, RoHS	

Model	Max. Temp.	Applications / Type
<b>KF-01A</b>	500°C	Surfaces
<b>KF-02A</b>	500°C	Surfaces / Hard-to-reach Surfaces
<b>KS-21A</b>	800°C	Interiors of Semi-solids (with High Temperature) Pipe type : SUS316

Cable : L=39.37inch [1,000mm]

## DIMENSIONS : inch [mm]





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