

**Totalizers**



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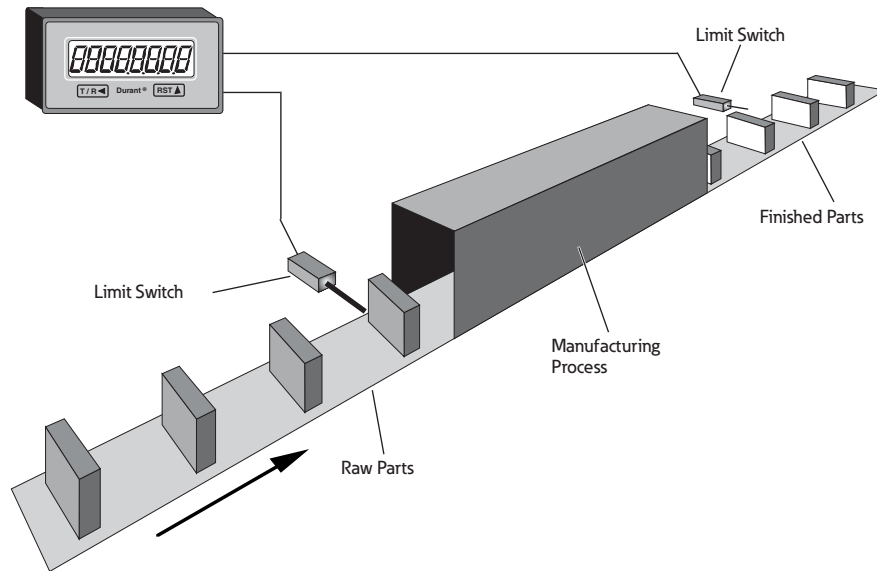
**Product Overview**

Totalizers are used in a wide variety of applications where accurate totals are needed. Typical applications include counting the number of parts produced, amount of material used, or the number of machine cycles occurring. Totalizers are the simplest and most common type of counter. As an added bonus, some models can perform both totalizing and ratemeter functions.

**Typical Application**








Parts are fed into a machine or process, an operation is performed, and the finished parts exit the machine or process. The subtract totalizer is used to indicate the number of parts in process.

**Application Example**






## Product Selection Guide

## Totalizers

	Characteristics	Typical Applications	Panel Cutout in Inches (mm)	Page
<b>Mechanical</b> 	Various size ranges for different duty cycles and environments No power supply needed Long life and always readable display	Winding and spooling equipment Position display Mechanical piece/cycle counting	Various mounting configurations	<b>5</b>
<b>Electromechanical</b> 	Various price, voltage and size ranges for different duty cycles and environments Long life and always readable display	Coin-operated equipment Gaming machines Printing presses Secondary machines (e.g. punch press)	Various mounting configurations	<b>29</b>
<b>E5-024-C</b> 	Non-replaceable battery (min. eight-year life) Compact, low cost and high efficiency Eight-digit LCD totalizers Manual or electrical reset Various counting modes/inputs	Replacement for mechanical counters Transaction counting Parts counting Position indication or measurement	0.870 x 1.772 (22 x 45)	<b>42</b>
<b>E5-24-E</b> 	Compact device with bright, LED display Multiple functions available: count, time, rate, multifunction, double-function 24 Vdc Power	Count, measure, time where small package and easy-to-read display required Position display Motor/pulley RPM	0.870 x 1.772 (22 x 45)	<b>44</b>
<b>Courier</b> 	Replaceable lithium battery Eight-digit, high-visibility LCD display Optional backlighting Various input options available	Portable/mobile/remote flow monitoring (e.g. sewer pumping, pesticide application) Position display, RPM Length measurement (e.g. carpet, cable)	1.299 x 2.677 (33 x 68)	<b>46</b>
<b>E5-496-E</b> 	Economical, multifunction display Large, LED characters AC or DC power options	Large, easy-to-read display Position display Motor/pulley RPM	1.772 x 3.780 (45 x 96)	<b>49</b>
<b>Eclipse</b> 	Six-digit, super bright LED display Multiple models available: totalizers, ratemeters, count controls, digital panel meters and flow controls	Length measurement and control Flow monitoring and control Process monitoring and display Voltage and current monitoring and display	1.772 x 3.780 (45 x 96)	<b>51</b>

#### Totalizers, continued

	<b>Characteristics</b>	<b>Typical Applications</b>	<b>Panel Cutout in Inches (mm)</b>	<b>Page</b>
<b>President</b> 	Bright LED display with 14 mm characters Simple configuration with 14-button tactile keypad Many different versions fit almost any application	Cut-to-length machinery with batching Parts batching/palletizing Die press positioning control Applications where parameter changes are required	2.667 x 5.433 (68 x 138)	<b>54</b>
<b>Ambassador</b> 	Eight-digit, high-visibility, two-line LCD display User-configurable control inputs Highly flexible control/display	Flow control where simultaneous total and rate display are required Cut-to-length and other simple processes where flexibility of inputs/outputs required	2.667 x 2.667 (68 x 68)	<b>58</b>
<b>Hour Meter/Counter</b> 	Combination counter consists of time meter and adding counter in one Without reset High shock resistance Magnified figures Protection IP52 (front) Data retention if power is lost Long service life UL approved	General counting Service interval for measurement systems (respiratory ventilators, oxygen machines, dialysis machines) Small appliances UV lamps Display panels in cars	1.988 (50.5) dia. or DIN rail	<b>112</b>

**Mechanical Totalizers (Stroke)****Contents**

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**Mechanical Totalizers (Stroke)****Product Overview**

Eaton's mechanical totalizers are available in a variety of heavy-duty configurations for applications when power is unavailable.

**Features**

- Variety of reset methods available
- Accurate counting without need for power

#### 1

### X Series/Pushbutton Desk Tally—Durant®

#### Product Description

##### X Series Counters

Model X Series is a dustproof and rustproof series of counters for light and medium-duty work. They are sound and durable, requiring a minimum of driving effort, and have been especially designed for incorporation as integral parts of a variety of machines and equipment.

##### Pushbutton Desk Tally

Ruggedly constructed counters with feather-touch pushbutton operation and maximum readability. Specifications and dimensions are basically the same as the X Series counters. Will give long and accurate service in areas requiring hand counting or during hand operations.

#### Product Selection

##### When Ordering Specify

To determine a model number from the Product Selection table for Model X

Series Stroke Counters and Pushbutton Desk Tallies, consider:

- Number of figures
- Drive

##### X Series Stroke Counter



##### Pushbutton Desk Tally



#### X Series Stroke Counters and Pushbutton Desk Tallies

No. of Figures	Drive	Reset	Mounting	Catalog Number	Order Number
4	LH lever	Knob	Base	4-X-1-1-L	40263400
5	LH lever	Knob	Base	5-X-1-1-L	40272401
4	RH lever	Knob	Base	4-X-1-1-R	40263401
5	RH lever	Knob	Base	5-X-1-1-R	40272402
4	LH lever	Knob	Base	4-X-1-1-L-REV ①	40263403
4	RH lever	Knob	Base	4-X-1-1-R-REV ①	40263402
5	LH lever	Knob	Base	5-X-1-1-L-REV ①	40272400
5	RH lever	Knob	Base	5-X-1-1-R-REV ①	40272403
4	Push bar	Knob	Base	4-X-2	21619400
4	Pushbutton	Knob	Base	4-X-2-A	33245400

##### Note

① Reverse stroke.

## Technical Data and Specifications

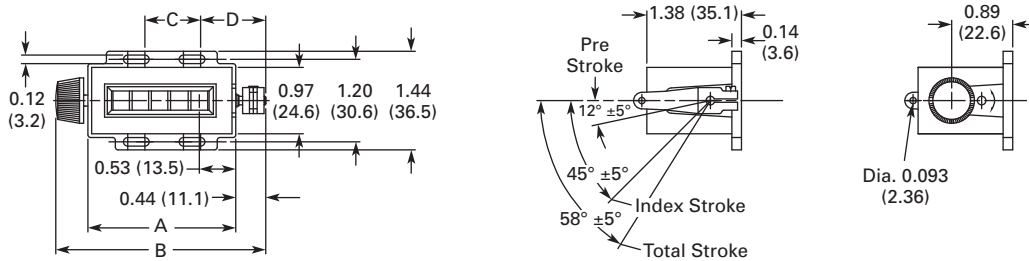
### General Specifications

Description	Specification
Figures	4 or 5
Speed	1000 cpm
Shaft	0.125 in (3.2 mm) diameter stainless steel
Drive	Drive parts of nylon
Bearings	Oil-less, maintenance free
Finish	Black frame and Cyclac black cover
Stroke operation	33° minimum; 58° maximum ①
Figure size	3/16 in (4.8 mm) high, white-on-black background
Reset	Knob

### Dimensions

Approximate Dimensions in Inches (mm)

#### X Series



Model	A	B	C	D
4-X-1-1_	1.86 (47.2)	2.76 (70.2)	0.62 (15.7)	0.89 (22.6)
5-X-1-1_	2.16 (54.8)	3.06 (77.8)	0.81 (20.6)	0.95 (24.1)

#### Note

① Operating stroke angles apply to forward stroke counter only. Check factory for angles of reverse stroke counter.

### CS Series—Durant®

#### Product Description

Model CS Series of small, compact, top reading stroke counters is designed for use in most industrial applications. These counters are ruggedly built and feature a single casting case, which assures great rigidity and a tight seal for working parts.

#### Product Selection

##### When Ordering Specify

To determine a model number from the Product Selection table for Model CS

Series Stroke Counters, consider:

- Number of figures
- Drive lever

CS Series Stroke Counter



#### CS Series Stroke Counters

No. of Figures	Drive	Reset	Mounting	Catalog Number	Order Number
4	RH lever	Wing nut	Base	<b>4-CS-1-1-R</b>	<b>31062400</b>
5	RH lever	Wing nut	Base	<b>5-CS-1-1-R</b>	<b>31062401</b>
5	LH lever	Wing nut	Base	<b>5-CS-1-1-L</b>	<b>31061401</b>
5	RH lever	Wing nut	Base	<b>5-CS-1-1-R-RP</b> ①	<b>01464400</b>
5	LH lever	Wing nut	Base	<b>5-CS-1-1-L-RP</b> ①	<b>00445400</b>

#### Technical Data and Specifications

##### General Specifications

Description	Specification
Figures	4 or 5
Speed	600 cpm
Stroke operation	37-1/2° minimum; 75° maximum
Shaft	0.25 in (6.4 mm) diameter stainless steel, rustproof
Drive	Accurately machined, hardened steel parts
Bearings	Oil-less, maintenance free
Figure size	11/32 in (8.7 mm) high, black-on-white background
Reset	Contoured wing nut
Finish	Black frame
Operating lever	Cast zinc. Adjustable to any position. Furnished complete with pull spring.

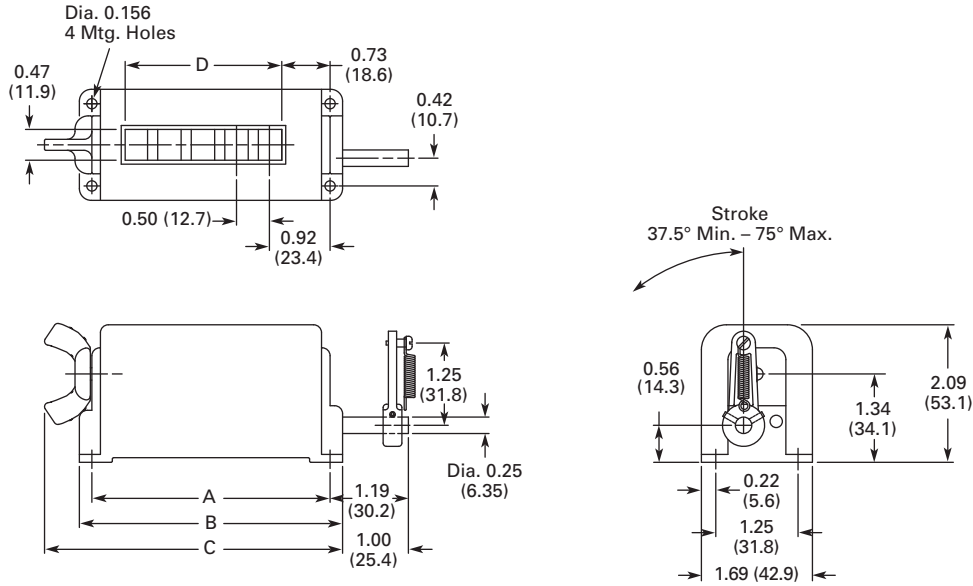
##### Note

① Special feature: rustproof.

## Dimensions

Approximate Dimensions in Inches (mm)

### CS Series



Model	A	B	C	D
4-CS-1_	3.12 (79.2)	3.50 (88.9)	4.03 (102.3)	1.87 (47.6)
5-CS-1_	3.62 (91.9)	4.00 (101.6)	4.53 (115.0)	2.38 (60.5)



#### 1

### H Series—Durant®

#### Product Description

Model H Series heavy-duty counters are designed for hard usage and long, trouble-free service. They are high speed, streamlined counters constructed of the highest quality materials and drive shaft moves in oil-less bearings. All shafts are stainless steel. The drive

action is designed with overstroke so counter does not bottom, increasing life and permitting easier installation. The sturdy cover is stamped steel, locked into position on a heavy, die-cast base of a special alloy. A heavy steel mounting plate is adjustable for either bottom

or back mounting. Model "H" has earned the reputation of being the "work horse" of industrial counters. Wing nut or tamper-proof reset lock which requires a key to reset the counter, guarding against unauthorized resetting or tampering.

#### Product Selection

##### When Ordering Specify

To determine a model number from the Product Selection table for Model H Series Stroke Counters, consider:

- Number of figures
- Drive lever location (left or right side)
- Type of reset (lock or wing nut)

#### H Series Stroke Counter



#### H Series Stroke Counters

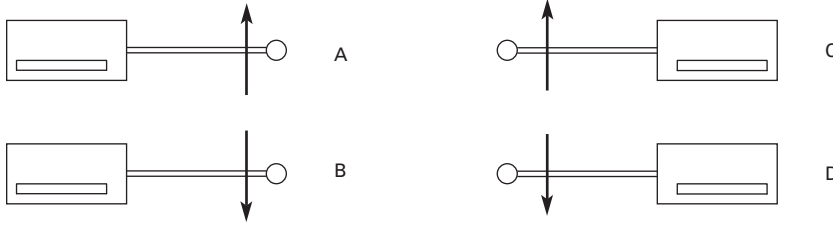
No. of Figures	Drive	Reset	Mounting	Catalog Number	Order Number
5	RH lever	Wing nut	Base	<b>5-H-1-1-R</b>	<b>40205400</b>
5	LH lever	Wing nut	Base	<b>5-H-1-1-L</b>	<b>40205401</b>
5	RH lever	Wing nut	Base	<b>5-H-1-1-R-REV</b> ①	<b>00597400</b>
5	LH lever	Wing nut	Base	<b>5-H-1-1-L-REV</b> ①	<b>00598400</b>
5	RH lever	Wing nut	Base	<b>5-H-1-1-R-RP</b> ②	<b>40205404</b>
5	LH lever	Wing nut	Base	<b>5-H-1-1-L-RP</b> ②	<b>40205405</b>
5	RH lever	Lock reset	Base	<b>5-H-1-2-R</b>	<b>40206404</b>
5	LH lever	Lock reset	Base	<b>5-H-1-2-L</b>	<b>40206405</b>
5	RH lever	Lock reset	Base	<b>5-H-1-2-R-RP</b> ②	<b>40206400</b>
5	RH lever	Lock reset	Base	<b>5-H-1-2-L-RP</b> ②	<b>40206401</b>
5	RH lever	Wing nut	Rear	<b>5-H-1-4-R</b>	<b>00507400</b>
5	LH lever	Wing nut	Rear	<b>5-H-1-4-L</b>	<b>00508400</b>
5	RH trip arm	Wing nut	Base	<b>5-H-5-A</b>	<b>31049400</b>
5	RH trip arm	Wing nut	Base	<b>5-H-5-B</b>	<b>31049401</b>
5	LH trip arm	Wing nut	Base	<b>5-H-5-C</b>	<b>31049402</b>
5	LH trip arm	Wing nut	Base	<b>5-H-5-D</b>	<b>31049403</b>
5	RH trip arm	Lock reset	Base	<b>5-H-6-A</b>	<b>01533400</b>
5	RH trip arm	Lock reset	Base	<b>5-H-6-B</b>	<b>01534400</b>
5	LH trip arm	Lock reset	Base	<b>5-H-6-C</b>	<b>01535400</b>
5	LH trip arm	Lock reset	Base	<b>5-H-6-D</b>	<b>01536400</b>

#### Notes

- ① Special feature: Reverse stroke.
- ② Special feature: Rustproof.

## Technical Data and Specifications

### Direction Location for 5H5 and 5H6



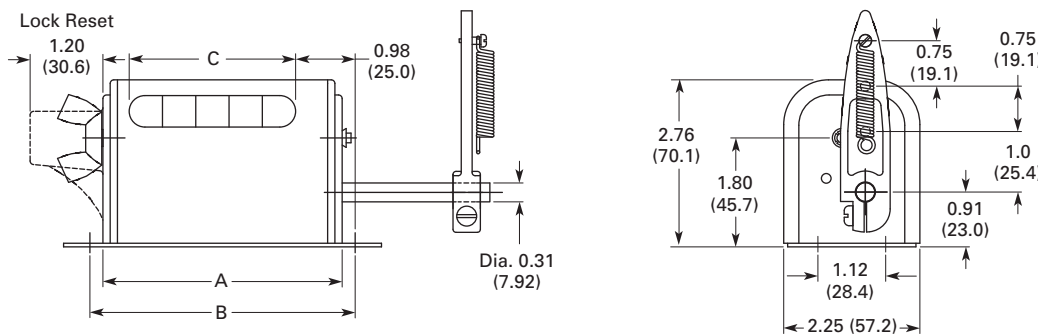
### General Specifications

Description	Specification
Figures	5
Speed	800 cpm
Stroke operation	37° stroke to count; 60° maximum stroke
Shaft	0.31 in (7.9 mm) diameter stainless steel, rustproof
Drive	Accurately machined, hardened steel parts; Geneva drive for extra long life
Bearings	Oil-less, maintenance free
Figure sizes	11/32 in (8.7 mm) high, black-on-white background
Reset	Wing nut or tumbler lock reset
Finish	Black frame and cover
Operating lever	Adjustable to any position. Furnished complete with pull spring for attaching.

### Dimensions

Approximate Dimensions in Inches (mm)

#### H Series



Model	A	B	C
Five figure units	3.95 (100.4)	4.38 (111.3)	2.75 (69.9)

**D Series—Durant®****Product Description**

Model D Series are medium-duty stroke counters available with 4, 5 or 6 figures that have been designed for general service on small production machines.

Although compact, Durant® “D” models are sturdily constructed and thoroughly tested for accuracy and efficient operation.

**Product Selection****When Ordering Specify**

To determine a model number from the Product Selection table for Model D

Series Stroke Counters, consider:

- Number of figures
- Drive lever

**D Series Stroke Counter****D Series Stroke Counters**

No. of Figures	Drive	Reset	Mounting	Catalog Number	Order Number
4	RH lever	Wing nut	Base	<b>4-D-1-1-R</b>	<b>34269401</b>
5	RH lever	Wing nut	Base	<b>5-D-1-1-R</b>	<b>34269402</b>
6	RH lever	Wing nut	Base	<b>6-D-1-1-R</b>	<b>34269403</b>
4	LH lever	Wing nut	Base	<b>4-D-1-1-L</b>	<b>34269405</b>
5	LH lever	Wing nut	Base	<b>5-D-1-1-L</b>	<b>34269406</b>
6	LH lever	Wing nut	Base	<b>6-D-1-1-L</b>	<b>34269407</b>

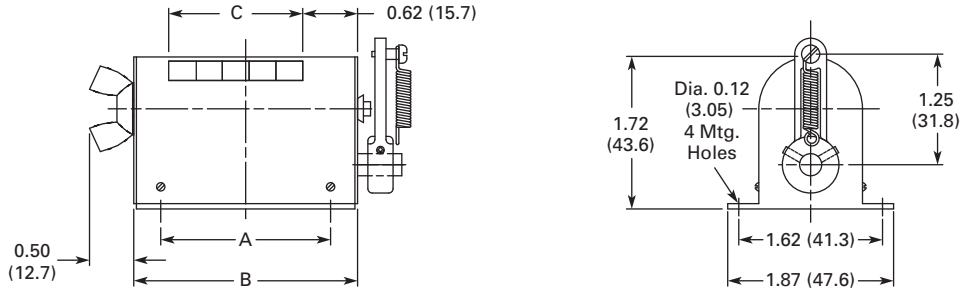
**Technical Data and Specifications****General Specifications**

Description	Specification
Figures	4, 5 and 6
Speed	400 cpm
Shaft	0.25 in (6.4 mm) diameter stainless steel, rustproof
Drive	Nylon ratchet and Delrin drive plate. Right-hand drive standard; left-hand drive available
Bearings	Oil-less, maintenance free
Figure size	1/4 in (6.4 mm) high, black-on-white background
Reset	Wing nut
Finish	Black frame and cover
Operating lever	Adjustable to any position. Furnished complete with pull string

## Dimensions

Approximate Dimensions in Inches (mm)

### D Series



Model	A	B	C
4-D-1-1_	1.59 (40.4)	2.20 (55.9)	1.20 (30.6)
5-D-1-1_	1.92 (48.8)	2.53 (64.3)	1.51 (38.5)
6-D-1-1_	2.26 (57.5)	2.87 (73.0)	1.83 (46.4)

#### Mechanical Totalizers (Revolution)



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#### Mechanical Totalizers (Revolution)

##### Product Overview

Eaton’s mechanical totalizers are available in a variety of heavy-duty configurations for applications when power is unavailable.

##### Features

- Variety of reset configurations available
- Accurate length measurement for application where power is not available

**X Series—Durant®****Product Description**

Model X Series are dust- and rust-proof counters designed for small, medium-duty units, accurate, durable and require a minimum of driving effort.

They are especially designed for incorporation as integral parts of a variety of equipment that gets severe usage under adverse climatic conditions.

**Product Selection****When Ordering Specify**

To determine a model number from the Product Selection table for Model X

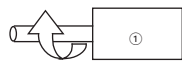
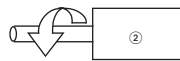
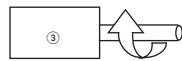
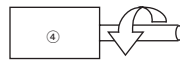
Series Revolution Counters, consider:

- Number of figures

- Ratio
- Drive shaft location
- Shaft rotation direction

**X Series Revolution Counter****X Series Revolution Counters**

No. of Figures	Drive	Rotation	Reset	Mounting	Catalog Number	Order Number
4	LH	Clockwise ①	Knob	Base	4-X-7-1-L-CL	40270406
5	LH	Clockwise ①	Knob	Base	5-X-7-1-L-CL	40275404
4	LH	Anti-clockwise ②	Knob	Base	4-X-7-1-L-AC	40270404
5	LH	Anti-clockwise ②	Knob	Base	5-X-7-1-L-AC	40275407
4	RH	Clockwise ③	Knob	Base	4-X-7-1-R-CL	40270407
5	RH	Clockwise ③	Knob	Base	5-X-7-1-R-CL	40275405
4	RH	Anti-clockwise ④	Knob	Base	4-X-7-1-R-AC	40270405
5	RH	Anti-clockwise ④	Knob	Base	5-X-7-1-R-AC	40275406
4	LH	Clockwise ①	Knob	Base	4-X-7-1-L-CL ⑤	40270402
5	LH	Clockwise ①	Knob	Base	5-X-7-1-L-CL ⑤	40275402
4	LH	Anti-clockwise ②	Knob	Base	4-X-7-1-L-AC ⑤	40270400
5	LH	Anti-clockwise ②	Knob	Base	5-X-7-1-L-AC ⑤	40275400
4	RH	Clockwise ③	Knob	Base	4-X-7-1-R-CL ⑤	40270403
5	RH	Clockwise ③	Knob	Base	5-X-7-1-R-CL ⑤	40275403
4	RH	Anti-clockwise ④	Knob	Base	4-X-7-1-R-AC ⑤	40270401
5	RH	Anti-clockwise ④	Knob	Base	5-X-7-1-R-AC ⑤	40275401

**Top View—Left-Hand Drive****Clockwise Shaft Rotation****Anti-Clockwise Shaft Rotation****Top View—Right-Hand Drive****Clockwise Shaft Rotation****Anti-Clockwise Shaft Rotation****Notes**

When shaft is turned in the reverse direction of rotation, the counter will subtract.

- ① Top view—left-hand drive with clockwise shaft rotation.
- ② Top view—left-hand drive with anti-clockwise shaft rotation.
- ③ Top view—right-hand drive with clockwise shaft rotation.
- ④ Top view—right-hand drive with anti-clockwise shaft rotation.
- ⑤ Special feature: 10:1 ratio.

## Technical Data and Specifications

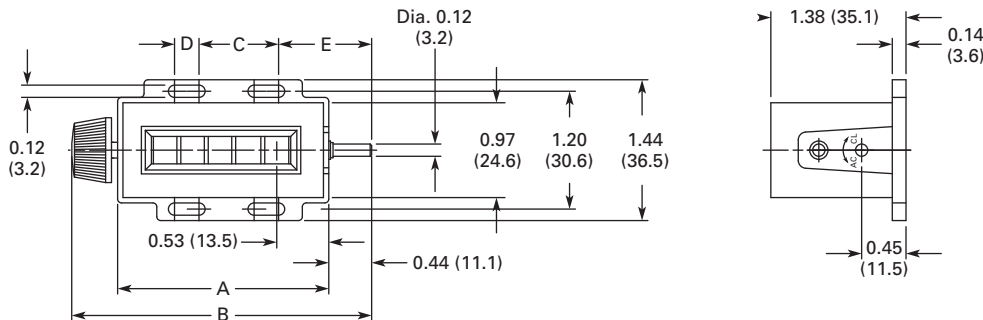
### General Specifications

Description	Specification
Figures	4 or 5
Speed	1000 cpm in 1:1 ratio; 10,000 cpm in 10:1 ratio for intermittent duty
Rotation direction	Clockwise or anti-clockwise when viewed from right-hand end of counter
Ratio	1:1 and 10:1 standard in 4-X-7 models 10:1 standard in 5-X-7 models
Shaft	0.125 in (3.2 mm) diameter stainless steel; standard length 0.44 in (11.1 mm)
Bearings	Oil-less, maintenance free
Figure size	3/16 in (4.8 mm) high, white-on-black background
Reset	Knob
Finish	Black frame, Cylolac black cover
Drive	Right- or left-hand drive; drive parts of Delrin
Ratio information	1:1 is one count to each revolution of drive shaft, 10:1 is ten counts to each revolution

### Dimensions

Approximate Dimensions in Inches (mm)

#### X Series



Model	A	B	C	D	E
4-X-7-1_	1.86 (47.2)	2.76 (70.2)	0.62 (15.7)	0.19 (4.8)	0.89 (22.6)
5-X-7-1_	2.16 (54.8)	3.06 (77.8)	0.81 (20.6)	0.25 (6.4)	0.95 (24.1)

**CS Series—Durant®****Product Description**

Model CS Series top reading revolution counters are designed for use in most industrial applications. The entire case is a single casting.

This provides greater rigidity, tighter seal of working parts and more streamlined contour. The unit is compact, rugged and features a flush mounted window to assure greater visibility.

**Product Selection****When Ordering Specify**

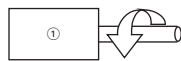
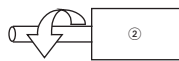
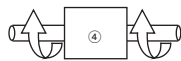
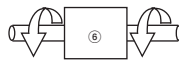
To determine a model number from the Product Selection table for Model CS

Series Revolution Counters, consider:

- Number of figures
- Ratio
- Drive shaft location
- Shaft rotation direction

**CS Series Revolution Counter****CS Series Revolution Counters**

No. of Figures	Drive	Rotation	Reset	Mounting	Catalog Number	Order Number
5	LH	Clockwise	Wing nut	Base	5-CS-7-1-L-CL	31060408
5	RH	Clockwise ①	Wing nut	Base	5-CS-7-1-R-CL	31060409
5	LH	Anti-clockwise	Wing nut	Base	5-CS-7-1-L-AC	31060410
5	RH	Anti-clockwise ②	Wing nut	Base	5-CS-7-1-R-AC	31060411
5	LH	Clockwise	Wing nut	Base	5-CS-7-1-L-CL ③	00440400
4	RH	Clockwise ①	Wing nut	Base	4-CS-7-1-R-CL ③	31057401
5	RH	Clockwise ①	Wing nut	Base	5-CS-7-1-R-CL ③	00441400
5	LH	Anti-clockwise	Wing nut	Base	5-CS-7-1-L-AC ③	00442400
4	RH	Anti-clockwise ②	Wing nut	Base	4-CS-7-1-R-AC ③	31057403
5	RH	Anti-clockwise ②	Wing Nut	Base	5-CS-7-1-R-AC ③	00443400
4	RH and LH	Clockwise ④	None	Base	4-CS-7-3-CL ⑤	31057408
4	RH and LH	Anti-clockwise ⑥	None	Base	4-CS-7-3-AC ⑤	31057409
5	RH and LH	Clockwise ④	None	Base	5-CS-7-3-CL ⑤	31057410
5	RH and LH	Anti-clockwise ⑥	None	Base	5-CS-7-3-AC ⑤	31057411

**Top View—Right-Hand Drive****Clockwise Shaft Rotation****Anti-Clockwise Shaft Rotation****Top View—Right- and Left-Hand Drive****Clockwise Shaft Rotation****Anti-Clockwise Shaft Rotation****Notes**

When shaft is turned in the reverse direction of rotation, the counter will subtract.

- ① Top view—right-hand drive with clockwise shaft rotation.
- ② Top view—right-hand drive with anti-clockwise shaft rotation.
- ③ Special feature: 10:1 ratio.
- ④ Top view—right- and left-hand drive with clockwise shaft rotation.
- ⑤ Special feature: 10:1 ratio, non-reset, double shaft.
- ⑥ Top view—right- and left-hand drive with anti-clockwise shaft rotation.



## Technical Data and Specifications

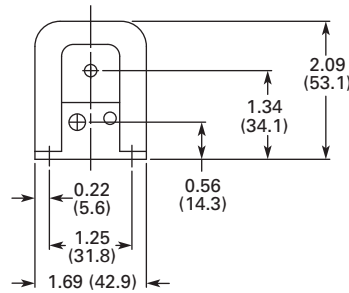
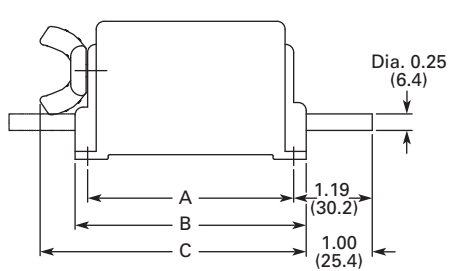
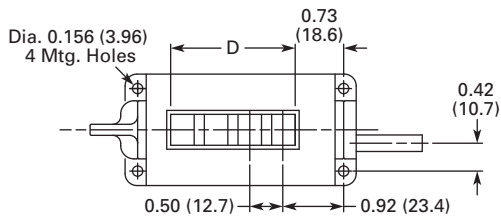
### General Specifications

Description	Specification
Figures	4 or 5
Speed	600 cpm in 1:1 ratio
Rotation direction	Clockwise or anti-clockwise when viewed from right-hand end of counter
Ratio	1:1 standard
Shaft	0.25 in (6.4 mm) diameter stainless steel; standard length 1 in (25.4 mm)
Drive	Spur gear
Bearings	Oil-less, maintenance free
Figure size	11/32 in (8.7 mm) high, black-on-white background
Reset	Contoured wing nut
Finish	Black frame

### Dimensions

Approximate Dimensions in Inches (mm)

#### CS Series



Model	A	B	C	D
4-CS-7_	3.12 (79.2)	3.50 (88.9)	4.03 (102.3)	1.89 (47.9)
5-CS-7_	3.62 (91.9)	4.00 (101.6)	4.53 (115.0)	2.38 (60.5)

**D-7 Series—Durant®****Product Description**

Model D-7 Series spur gear end drive units are compact counters that meet a variety of needs. Accurate, dependable and moderately priced, they are especially

recommended for braiding machines, low-speed coil winders, wire measuring equipment and all medium-duty revolution applications.

**Product Selection****When Ordering Specify**

To determine a model number from the Product Selection table for Model D-7

Series Revolution Counters, consider:

- Number of figures
- Shaft drive
- Shaft rotation direction
- Reset or non-reset

**D-7 Series Revolution Counter****D-7 Series Revolution Counters**

No. of Figures	Drive	Rotation	Reset	Mounting	Catalog Number	Order Number
5	LH	Clockwise ①	Wing nut	Base	5-D-7-1-L-CL	31127408
5	LH	Anti-clockwise ②	Wing nut	Base	5-D-7-1-L-AC	31127405
5	RH	Clockwise ③	Wing nut	Base	5-D-7-1-R-CL	31127431
5	RH	Anti-clockwise ④	Wing nut	Base	5-D-7-1-R-AC	31127400
5	LH	Clockwise ①	None	Base	5-D-7-3-L-CL	31127416
5	LH	Anti-clockwise ②	None	Base	5-D-7-3-L-AC	31127412
5	RH	Clockwise ③	None	Base	5-D-7-3-R-CL	31127438
5	RH	Anti-clockwise ④	None	Base	5-D-7-3-R-AC	31127442

**Top View—Left-Hand Drive****Clockwise Shaft Rotation****Anti-Clockwise Shaft Rotation****Top View—Right-Hand Drive****Clockwise Shaft Rotation****Anti-Clockwise Shaft Rotation****Notes**

When shaft is turned in the reverse direction of rotation, the counter will subtract.

- ① Top view—left-hand drive with clockwise shaft rotation.
- ② Top view—left-hand drive with anti-clockwise shaft rotation.
- ③ Top view—right-hand drive with clockwise shaft rotation.
- ④ Top view—right-hand drive with anti-clockwise shaft rotation.

## Technical Data and Specifications

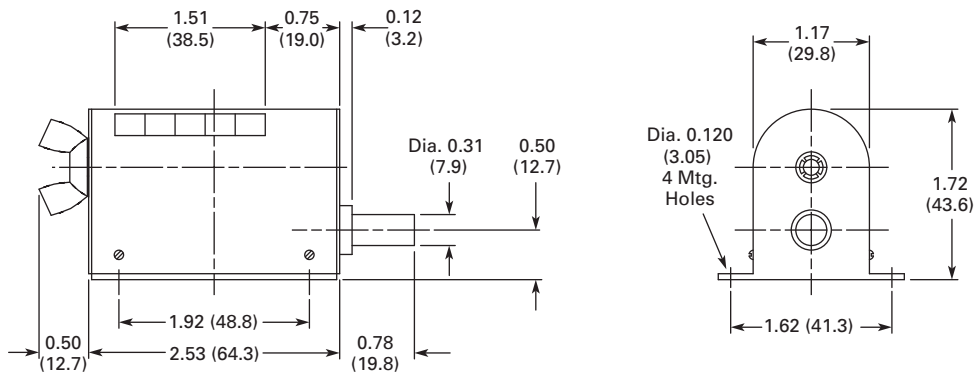
### General Specifications

Description	Specification
Figures	5 standard
Speed	Up to 800 cpm in 1:1 ratio
Rotation direction	Clockwise or anti-clockwise when viewed from right-hand end of counter
Ratio	1:1 standard
Shaft	0.31 in (7.9 mm) diameter stainless steel; 0.66 in (16.7 mm) right-hand drive, 0.63 in (15.9 mm) left-hand drive
Drive	Right- or left-hand spur gear drive
Bearings	Oil-less, maintenance free
Figure size	1/4 in (6.4 mm) high, black-on-white background
Finish	Black frame and cover
Reset	Wing nut or non-reset

### Dimensions

Approximate Dimensions in Inches (mm)

#### D-7 Series



**D-6 Series—Durant®****Product Description**

Model D-6 right-angle worm drive counters are ruggedly designed for high speeds on light-duty applications. Small “D” counters are easily

adapted as accessory equipment on machinery where right-angle drive is desired to permit full view reading of the counter.

**Product Selection****When Ordering Specify**

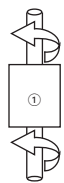
To determine a model number from the Product Selection table for Model D-6

Series Revolution Counters, consider:

- Shaft rotation direction

**D-6 Series Revolution Counter****D-6 Series Revolution Counters**

No. of Figures	Drive	Rotation	Reset	Mounting	Catalog Number	Order Number
5	Front and rear	Anti-clockwise ①	Wing nut	Base	<b>5-D-6-1-AC</b>	<b>31052401</b>
6	Front and rear	Anti-clockwise ①	Wing nut	Base	<b>6-D-6-1-AC</b>	<b>31052402</b>
5	Front and rear	Clockwise ②	Wing nut	Base	<b>5-D-6-1-CL</b>	<b>31052404</b>
6	Front and rear	Clockwise ②	Wing nut	Base	<b>6-D-6-1-CL</b>	<b>31052405</b>
5	Front and rear	Anti-clockwise ①	Wing nut	Base	<b>5-D-8-1-AC ③</b>	<b>40187401</b>
6	Front and rear	Anti-clockwise ①	Wing nut	Base	<b>6-D-8-1-AC ③</b>	<b>40187402</b>
5	Front and rear	Clockwise ②	Wing nut	Base	<b>5-D-8-1-CL ③</b>	<b>40187417</b>
6	Front and rear	Clockwise ②	Wing nut	Base	<b>6-D-8-1-CL ③</b>	<b>40187418</b>
5	Front and rear	Clockwise ②	Wing nut	Base	<b>5-D-9-1-CL ④</b>	<b>40187404</b>
5	Front and rear	Anti-clockwise ①	Wing nut	Base	<b>5-D-9-1-AC ④</b>	<b>40187410</b>
5	Front and rear	Clockwise ②	Wing nut	Base	<b>5-D-90-1-CL ⑤</b>	<b>40187414</b>
5	Front and rear	Anti-clockwise ①	Wing nut	Base	<b>5-D-90-1-AC ⑤</b>	<b>40187408</b>

**Top View of Counter****Anti-Clockwise Shaft Rotation****Clockwise Shaft Rotation****Notes**

When shaft is turned in the reverse direction of rotation, the counter will subtract.

- ① Top view of counter—anti-clockwise shaft rotation.
- ② Top view of counter—clockwise shaft rotation.
- ③ Special feature: Measuring wheels and brackets available for lineal measurement in feet.
- ④ Special feature: Measuring wheels and brackets available for lineal measurement in yards and 1/8ths.
- ⑤ Special feature: Measuring wheels and brackets available for lineal measurement in yards.

## Technical Data and Specifications

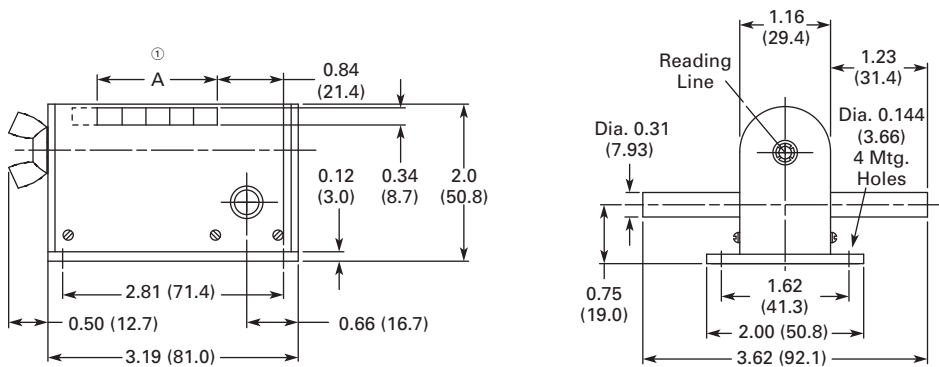
### General Specifications

Description	Specification
Figures	5 or 6
Speed	Up to 1500 cpm in 1:1 ratio
Rotation direction	Clockwise or anti-clockwise when viewed from right-hand end of counter
Ratio	1:1 standard
Shaft	0.31 in (7.9 mm) diameter stainless steel; 1.25 in (31.8 mm) length standard
Drive	Worm drive
Bearings	Oil-less, maintenance free
Figure size	1/4 in (6.4 mm) high, black-on-white background
Finish	Black frame and cover
Reset	Wing nut

### Dimensions

Approximate Dimensions in Inches (mm)

#### D-6 Series



#### Note

⊙ A = 1.85 in (46.9 mm) for 6 figures and 1.53 in (38.9 mm) for 5 figures.

**HDW Series—Durant®****Product Description**

Model HDW Series are high speed, end drive revolution counters that have the rugged features of all Durant "H" counters, with the addition of double worm drive that produces speeds up to 2000 cpm. Lightweight precision molded wheels reduce centrifugal force and

eliminate slipping. They are particularly recommended for quick starting and stopping machines, such as coil winders and wire measuring or reeling equipment and on applications where continuous high speed measuring is required.

**Product Selection****When Ordering Specify**

To determine a model number from the Product Selection table for Model

HDW Series Revolution Counters, consider:

- Shaft drive
- Shaft rotation direction

**HDW Series Revolution Counter****HDW Series Revolution Counters**

No. of Figures	Drive	Rotation	Reset	Mounting <sup>①</sup>	Catalog Number	Order Number
5	RH	Clockwise <sup>②</sup>	Wing nut	Base	5-HDW-7-1-R-CL	31050400
5	RH	Anti-clockwise <sup>③</sup>	Wing nut	Base	5-HDW-7-1-R-AC	31050401
5	LH	Clockwise <sup>④</sup>	Wing nut	Base	5-HDW-7-1-L-CL	31050402
5	LH	Anti-clockwise <sup>⑤</sup>	Wing nut	Base	5-HDW-7-1-L-AC	31050403

**Top View—Right-Hand Drive****Clockwise Shaft Rotation****Anti-Clockwise Shaft Rotation****Top View—Left-Hand Drive****Clockwise Shaft Rotation****Anti-Clockwise Shaft Rotation****Notes**

When shaft is turned in the reverse direction of rotation, the counter will subtract.

- ① Mounting plate is adjustable for base or back mounting.
- ② Top view—right-hand drive with clockwise shaft rotation.
- ③ Top view—right-hand drive with anti-clockwise shaft rotation.
- ④ Top view—left-hand drive with clockwise shaft rotation.
- ⑤ Top view—left-hand drive with anti-clockwise shaft rotation.

## Technical Data and Specifications

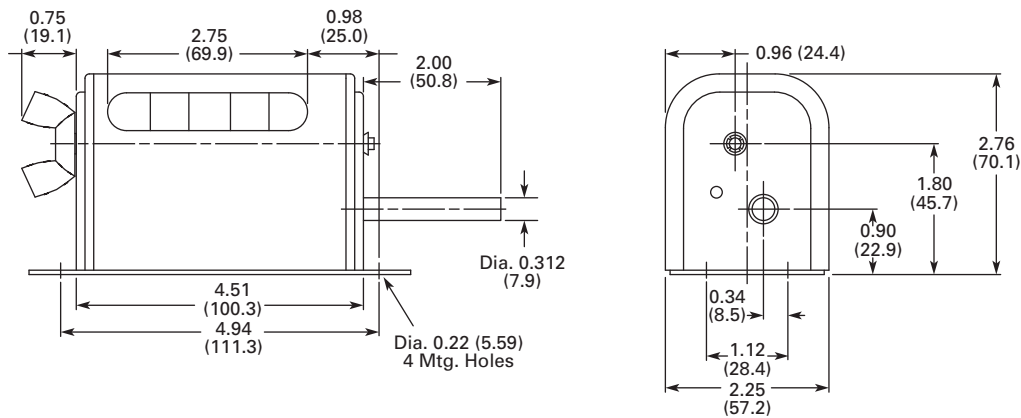
### General Specifications

Description	Specification
Figures	5
Speed	Up to 2000 cpm
Rotation direction	Clockwise or anti-clockwise when viewed from right-hand end of counter
Ratio	1:1 only
Shaft	0.31 in (7.9 mm) diameter stainless steel; standard length 2 in (50.8 mm)
Drive	Right- or left-hand drive
Bearings	Oil-less, maintenance free
Figure size	11/16 in (17.5 mm) high, white-on-black background
Reset	Wing nut or tumbler lock reset
Finish	Black frame and cover

### Dimensions

Approximate Dimensions in Inches (mm)

#### HDW Series



**T Series—Durant®****Product Description**

Model T Series worm drive revolution counters are sturdy, high speed instruments used on many

heavy machines, engines or motors. Variety of drive permits direct connection. Suitable for panel mounting.

**Product Selection****When Ordering Specify**

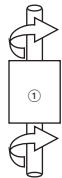
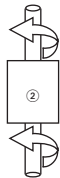
To determine a model number from the Product Selection table for Model T

Series Revolution Counters, consider:

- Shaft rotation direction

**T Series Revolution Counter****T Series Revolution Counters**

No. of Figures	Drive	Rotation	Reset	Mounting	Catalog Number	Order Number
5	Top and bottom	Clockwise <sup>①</sup>	Wing nut	Back	<b>5-T-6-1-CL</b>	<b>40342400</b>
5	Top and bottom	Anti-clockwise <sup>②</sup>	Wing nut	Back	<b>5-T-6-1-AC</b>	<b>40342401</b>
5	Top and bottom	Clockwise <sup>①</sup>	Wing nut	Back	<b>5-T-8-1-CL</b> <sup>③</sup>	<b>40179402</b>
5	Top and bottom	Anti-clockwise <sup>②</sup>	Wing nut	Back	<b>5-T-8-1-AC</b> <sup>③</sup>	<b>40179403</b>
5	Top and bottom	Clockwise <sup>①</sup>	Wing nut	Back	<b>5-T-91-CL</b> <sup>④</sup>	<b>40179408</b>
5	Top and bottom	Anti-clockwise <sup>②</sup>	Wing nut	Back	<b>5-T-91-AC</b> <sup>④</sup>	<b>40179409</b>
5	Top and bottom	Clockwise <sup>①</sup>	Wing nut	Back	<b>5-T-90-1-CL</b> <sup>⑤</sup>	<b>40179406</b>
5	Top and bottom	Anti-clockwise <sup>②</sup>	Wing nut	Back	<b>5-T-90-1-AC</b> <sup>⑤</sup>	<b>40179407</b>

**Top View of Counter****Clockwise Shaft Rotation****Anti-Clockwise Shaft Rotation****Notes**

When shaft is turned in the reverse direction of rotation, the counter will subtract.

- <sup>①</sup> Top view of counter—clockwise shaft rotation.
- <sup>②</sup> Top view of counter—anti-clockwise shaft rotation.
- <sup>③</sup> Special feature: Measuring wheels and brackets available for lineal measurement in feet.
- <sup>④</sup> Special feature: Measuring wheels and brackets available for lineal measurement in yards and 1/8ths.
- <sup>⑤</sup> Special feature: Measuring wheels and brackets available for lineal measurement in yards.



### Technical Data and Specifications

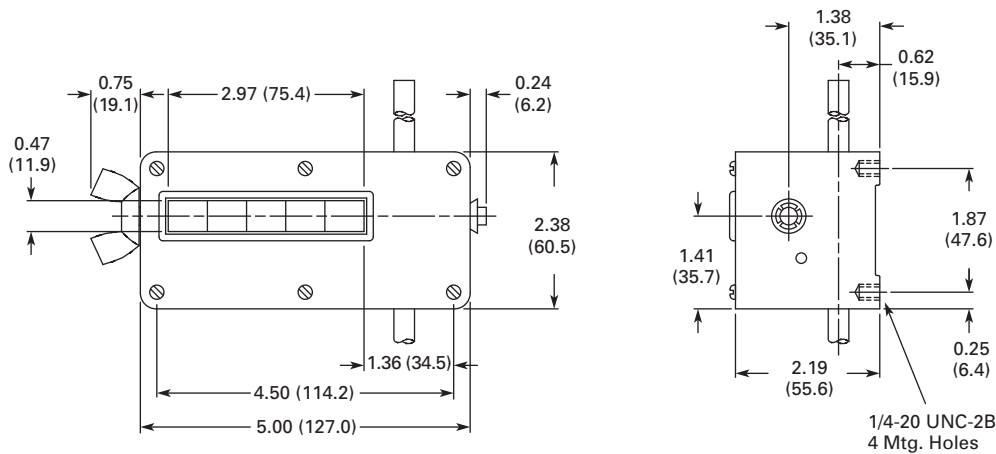
#### General Specifications

Description	Specification
Figures	5 standard
Speed	1500 cpm in 1:1 ratio
Rotation direction	Clockwise or anti-clockwise determined top looking down
Ratio	1:1 standard
Shaft	0.31 in (7.9 mm) diameter stainless steel; standard extends 2 in (50.8 mm) top and bottom
Drive	Hobbed steel and bronze worm gearing; subtracts when reversed
Bearings	Oil-less, maintenance free
Figure size	11/32 in (8.7 mm) high, black-on-white background
Reset	Left-hand wing nut standard
Finish	Black frame and face plate

#### Dimensions

Approximate Dimensions in Inches (mm)

#### T Series



**H Series—Durant®****Product Description**

Model H Series are heavy-duty, end drive revolution counters designed for industrial use; suitable for

speeds up to 800 cpm. They are available with either right- or left-hand drive, and with wing nut reset.

**Product Selection****When Ordering Specify**

To determine a model number from the Product Selection table for Model H Series Revolution

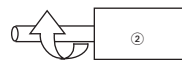
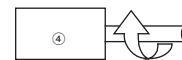
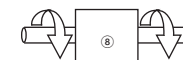
Counters, consider:

- Drive shaft location
- Shaft rotation direction

**H Series Revolution Counter****H Series Revolution Counters**

No. of Figures	Drive	Rotation	Reset	Mounting ①	Ratio	Catalog Number	Order Number
5	LH	Clockwise ②	Wing nut	Base	1.1	<b>5-H-7-1-L-CL</b>	<b>00509400</b>
5	LH	Anti-clockwise ③	Wing nut	Base	1.1	<b>5-H-7-1-L-AC</b>	<b>00510400</b>
5	RH	Clockwise ④	Wing nut	Base	1.1	<b>5-H-7-1-R-CL</b>	<b>00513400</b>
5	RH	Anti-clockwise ⑤	Wing nut	Base	1.1	<b>5-H-7-1-R-AC</b>	<b>00514400</b>
5	LH	Clockwise ⑥	Wing nut	Base	3.2	<b>5-H-8-1-L-CL ⑦</b>	<b>00601400</b>
5	LH	Anti-clockwise ⑧	Wing nut	Base	3.2	<b>5-H-8-1-L-AC ⑦</b>	<b>00602400</b>
5	RH	Clockwise ⑥	Wing nut	Base	3.2	<b>5-H-8-1-R-CL ⑦</b>	<b>00605400</b>
5	RH	Anti-clockwise ⑧	Wing nut	Base	3.2	<b>5-H-8-1-R-AC ⑦</b>	<b>00606400</b>
5	LH	Clockwise ⑥	Wing nut	Base	1.2	<b>5-H-9-1-L-CL ⑨</b>	<b>00619400</b>
5	LH	Anti-clockwise ⑩	Wing nut	Base	1.2	<b>5-H-9-1-L-AC ⑨</b>	<b>00620400</b>
5	RH	Clockwise ⑥	Wing nut	Base	1.2	<b>5-H-9-1-R-CL ⑨</b>	<b>00617400</b>
5	RH	Anti-clockwise ⑩	Wing nut	Base	1.2	<b>5-H-9-1-R-AC ⑨</b>	<b>00618400</b>
5	LH	Clockwise ⑩	Wing nut	Base	1.2	<b>5-H-9-0-1-L-CL ⑩</b>	<b>00611400</b>
5	LH	Anti-clockwise ⑩	Wing nut	Base	1.2	<b>5-H-9-0-1-L-AC ⑩</b>	<b>00612400</b>
5	RH	Clockwise ⑩	Wing nut	Base	1.2	<b>5-H-9-0-1-R-CL ⑩</b>	<b>00609400</b>
5	RH	Anti-clockwise ⑩	Wing nut	Base	1.2	<b>5-H-9-0-1-R-AC ⑩</b>	<b>00610400</b>

For 5-H-8 and 5-H-9 Series Counters, drive shaft extends from both sides of the counter. Specifying RH or LH drive will determine the location of the reset (i.e. LH drive will have reset on the right-hand side of the counter, and RH drive will have reset on left-hand side of the counter).

**Top View—LH Drive****Clockwise Shaft Rotation****Anti-Clockwise Shaft Rotation****Top View—RH Drive****Clockwise Shaft Rotation****Anti-Clockwise Shaft Rotation****Top View—RH and LH Drive****Clockwise Shaft Rotation****Anti-Clockwise Shaft Rotation****Notes**

When shaft is turned in the reverse direction of rotation, the counter will subtract.

① Mounting plate is adjustable for base or back mounting.

② Top view—left-hand drive with clockwise shaft rotation.

③ Top view—left-hand drive with anti-clockwise shaft rotation.

④ Top view—right-hand drive with clockwise shaft rotation.

⑤ Top view—left-hand drive with anti-clockwise shaft rotation.

⑥ Top view—right-hand and left hand drive with clockwise shaft rotation.

⑦ Special feature: Measuring wheels and brackets available for lineal measurement in feet.

⑧ Top view—right-hand and left hand drive with anti-clockwise shaft rotation.

⑨ Special feature: Measuring wheels and brackets available for lineal measurement in yards and 1/8ths.

⑩ Special feature: Measuring wheels and brackets available for lineal measurement in yards.

#### 1

### Technical Data and Specifications

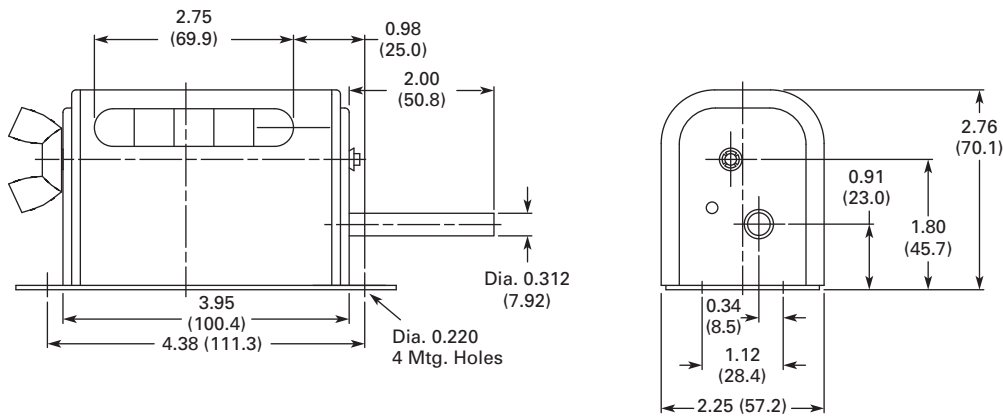
#### General Specifications

Description	Specification
Figures	5
Speed	Up to 800 cpm
Rotation direction	Clockwise or anti-clockwise when viewed from right-hand end of counter
Shaft	0.31 in (7.9 mm) diameter stainless steel; standard length 2 in (50.8 mm)
Drive	Right- or left-hand drive
Bearings	Oil-less, maintenance free
Figure size	11/32 in (8.7 mm) high, white-on-black background
Reset	Wing nut
Finish	Black frame and cover
Mounting bracket available	Order number 01465400

#### Dimensions

Approximate Dimensions in Inches (mm)

#### H Series



**Electromechanical Totalizers****Contents**

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**Electromechanical Totalizers****Product Overview**

Eaton's electromechanical counters provide accurate counting from a variety of electrical signals and a display that is always readable, even when power is not present.

**Features**

- Available with reset and without
- Always readable display
- Variety of mounting options

**Standards and Certifications**

- UL certifications on some products (see individual product pages for details)



1

#### Micro Display Counter—Eaton®

##### Product Description

Eaton's micro display counter is perfect for 12 Vdc applications where small size is important.

##### Features

- Seven-digit micro adding counter
- High shock resistance
- Low power consumption; suitable for battery consumption
- Small dimensions
- Large optical figures
- Different viewing possibilities
- Flush mount with integrated spring clip
- Protection IP65
- Stores value also at power failure
- Long service life

##### Standards and Certifications

- cRU<sup>us</sup> certified
- CE marked



#### Product Selection

##### Micro Display Counter



##### Micro Display Counter

Description	Catalog Number
Micro display counter	7-Y-3013PM-401

#### Technical Data and Specifications

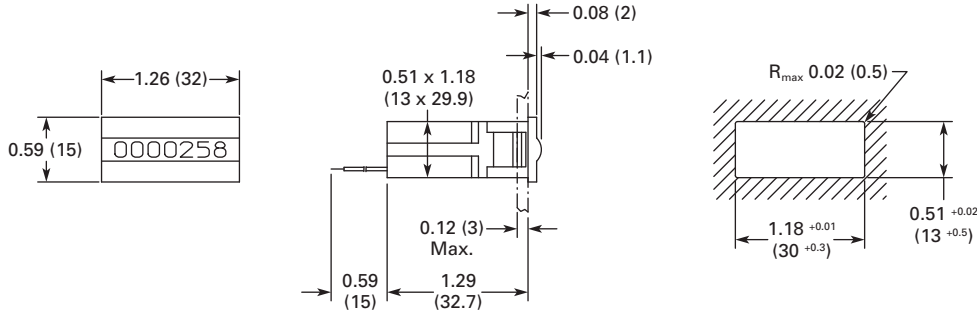
##### General Specifications

Description	Specification
Electrical connections	Built-in counter, flying leads, AWG 22, approx. 5.9 in (150 mm)
Power consumption	At 68°F (20°C) and nominal voltage At 25 Imp/s: approx. 250 mW
Rated voltage	12 Vdc ±10%
Counting frequency	25 Imp/s
Pulse duration	Min. 20 ms
Pulse interval	Min. 20 ms
Cycle duration factor	100%
Number of digits	7
Counting system	Adding
Figure size	0.05 x 0.16 in (1.2 x 4 mm) high optical
Color of figures	White-on-black
Reset	No reset
Ambient temperature	14° to 140°F (-10° to 60°C)
Mounting position	Any
Operating Life	>50 x 10 <sup>6</sup> pulses
Protection	IP65 (only front side)
Housing	Clear plastic
Weight	0.53–0.71 oz (15–18g)

**Dimensions**

Approximate Dimensions in Inches (mm)

**Micro Display Counter**



# 1.1

## Counters, Panel Meters, Tachometers and Timers

### Totalizers

1

#### SE Series

##### Product Description

Compact electromechanical counters.

##### Features

- Low-cost electromechanical counter
- Multiple voltage ranges for almost any application
- Compact with various mounting options
- Wire leads for electrical connections

##### Standards and Certifications

- UL recognized



#### Product Selection

SE Series Counter—  
Electromechanical



#### SE Series Electromechanical Counters

Description	Catalog Number	Order Number
<b>Six-Digit Electric Counter</b>		
Bottom mount sub-miniature 12 Vdc	6-Y-41610-401-SE	41610401
Bottom mount sub-miniature 24 Vdc	6-Y-41610-402-SE	41610402
Bottom mount sub-miniature 120 Vac	6-Y-41610-406-SE	41610406
Bottom mount sub-miniature 240 Vac	6-Y-41610-407-SE	41610407
Base mount sub-miniature 12 Vdc	6-Y-41611-401-SE	41611401
Base mount sub-miniature 24 Vdc	6-Y-41611-402-SE	41611402
Base mount sub-miniature 120 Vac	6-Y-41611-406-SE	41611406
Base mount sub-miniature 240 Vac	6-Y-41611-407-SE	41611407
Top mount sub-miniature 12 Vdc	6-Y-41612-401-SE	41612401
Top mount sub-miniature 24 Vdc	6-Y-41612-402-SE	41612402
Top mount sub-miniature 120 Vac	6-Y-41612-406-SE	41612406
Top mount sub-miniature 240 Vac	6-Y-41612-407-SE	41612407
Panel mount sub-miniature 12 Vdc	6-Y-41613-401-SE	41613401
Panel mount sub-miniature 24 Vdc	6-Y-41613-402-SE	41613402
Panel mount sub-miniature 120 Vac	6-Y-41613-406-SE	41613406
Panel mount sub-miniature 240 Vac	6-Y-41613-407-SE	41613407
Special base mount sub-miniature 12 Vdc	6-Y-41622-401-SE	41622401
Special base mount sub-miniature 24 Vdc	6-Y-41622-402-SE;	41622402
Special base mount sub-miniature 120 Vac	6-Y-41622-406-SE	41622406
Special base mount sub-miniature 240 Vac	6-Y-41622-407-SE	41622407
Special top mount sub-miniature 12 Vdc	6-Y-41623-401-SE	41623401
Special top mount sub-miniature 24 Vdc	6-Y-41623-402-SE	41623402
Special top mount sub-miniature 120 Vac	6-Y-41623-406-SE	41623406
Special top mount sub-miniature 240 Vac	6-Y-41623-407-SE	41623407
Snap-in mount sub-miniature 12 Vdc	6-Y-42613-401-SE	42613401
Snap-in mount sub-miniature 24 Vdc	6-Y-42613-402-SE	42613402
Snap-in mount sub-miniature 120 Vac	6-Y-42613-406-SE	42613406
Snap-in mount sub-miniature 240 Vac	6-Y-42613-407-SE	42613407

## Technical Data and Specifications

### General Specifications

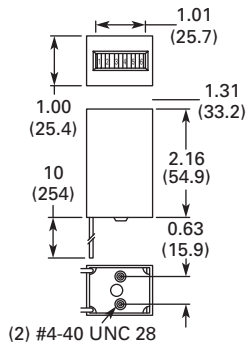
Description	Specification
Figures	6
Count speed	600 cpm
Figure size	5/32 in (4.0 mm)
Reset	None
Mounting	Base, bottom, top, panel or snap-in
Finish	Black, self-extinguishing plastic
Power requirements	DC: 1.5W, AC: 5.0V

### Dimensions

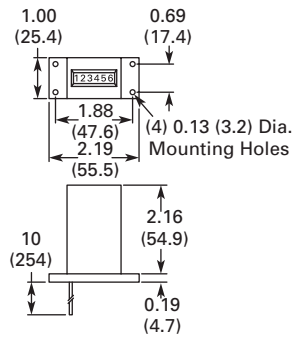
Approximate Dimensions in Inches (mm)

#### SE Series

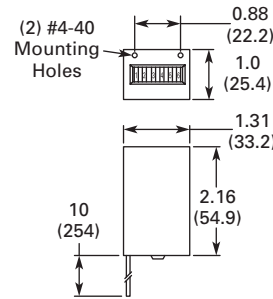
#### Bottom Mount



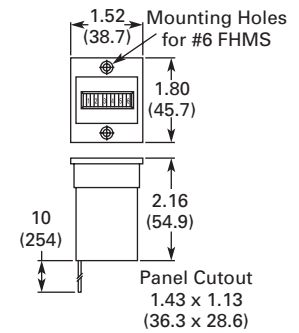
#### Base Mount



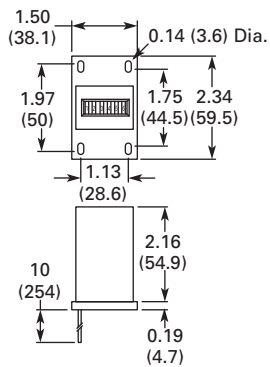
#### Top Mount



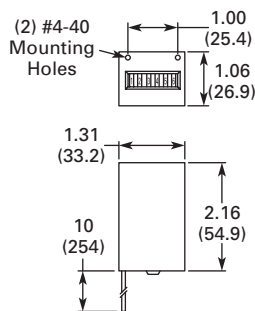
#### Panel Mount



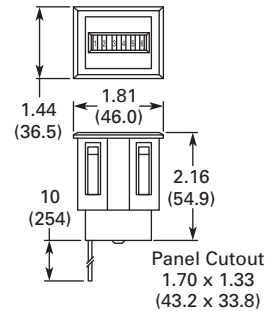
#### Special Base Mount



#### Special Top Mount



#### Snap Mount





**MF Series—Durant®****Product Description**

Model MF Series are shaded pole electric counters with straight AC operation and feature a non-rectified, shaded pole coil designed to withstand transient, high voltage spikes. This feature,

combined with a simplified, hinged escapement drive, also eliminates the possibility of miscounts and greatly adds to the life of the counter. Tallies at speeds up to 750 cpm.

**Product Selection****MF Series Electric Counter****MF Series Electric Counters**

No. of Figures	Voltage	Reset	Mounting	Catalog Number	Order Number
7	120 AC	Knob	Base	7-Y-1-MF-120A ①	32650400
7	240 AC	Knob	Base	7-Y-1-MF-240A	32650402
6	120 AC	Knob	Base	6-Y-1-MF-120A ①	32651400
6	24 AC	Knob	Base	6-Y-1-MF-24A	32651402
6	240 AC	Knob	Base	6-Y-1-MF-240A	32651403
6	230 AC/50 Hz	Knob	Base	6-Y-1-MF-230A	32651412
7	120 AC	Knob	Panel	7-Y-1-MF-PM-120A ①	32652400
7	120 AC	Non-reset	Panel	7-Y-13-MF-PM-120A ①	32652402
6	120 AC	Knob	Panel	6-Y-1-MF-PM-120A ①	32653400
6	24 AC	Knob	Panel	6-Y-1-MF-PM-24A	32653402
6	240 AC	Knob	Panel	6-Y-1-MF-PM-240A	32653403
6	120 AC	Non-reset	Panel	6-Y-13-MF-PM-120A ①	32653405
6	240 AC	Non-reset	Panel	6-Y-13-MF-PM-240A	32653410
6	120 AC	Keylock reset	Panel	6-Y-12-MF-PM-120A ①	32654400
6	24 AC	Keylock reset	Panel	6-Y-12-MF-PM-24A	32654403
6	240 AC	Keylock reset	Panel	6-Y-12-MF-PM-240A	32654404
7	120 AC	Keylock reset	Panel	7-Y-12-MF-PM-120A ①	32655400
6	120 AC	Non-reset	Base	6-Y-13-MF-120A ①	32658400
6	240 AC	Non-reset	Base	6-Y-13-MF-240A	32658402
7	120 AC	Non-reset	Base	7-Y-13-MF-120A	32659400

**Technical Data and Specifications****General Specifications**

Description	Specification
Figures	6 or 7
Speed	Up to 750 cpm
Figure size	3/16 in (4.8 mm) high, white-on-black background
Reset	Knob, key or non-reset
Mounting	Base or panel mount
Finish	Black frame and side covers
Electrical connections	Two-wire leads, 9 in (229 mm) long, AWG 22 (0.34 mm <sup>2</sup> ), stripped 0.38 in (9.5 mm)
Power requirements	12 watts
Coils	Various AC voltages and frequencies can be supplied on special order. Count coils are designed for continuous duty at rated voltage.

**Note**

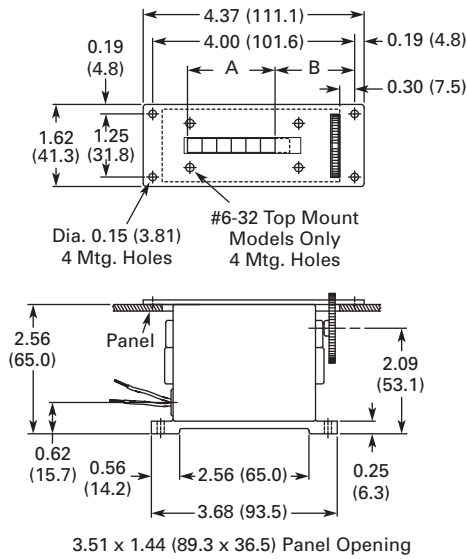
① UL Recognized.

### Dimensions

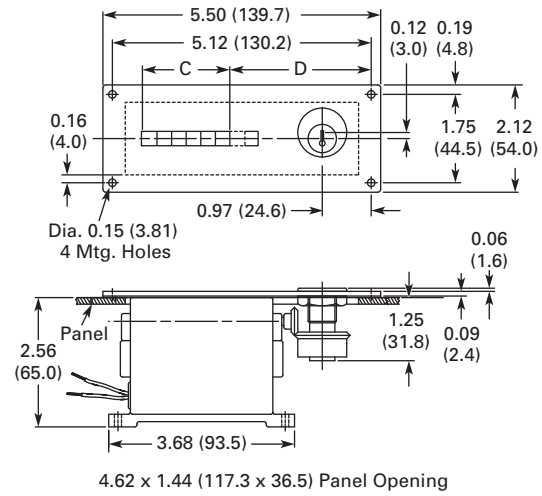
Approximate Dimensions in Inches (mm)

#### MF Series

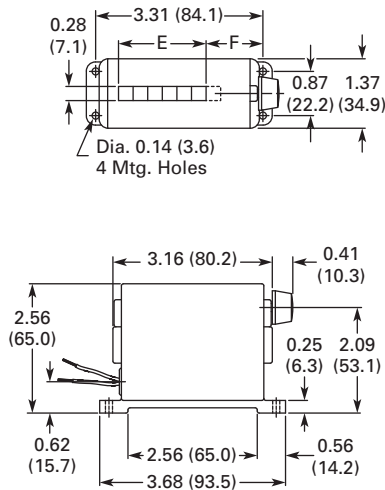
#### Panel Mounted



#### Panel Mounted with Tumbler Lock



#### Base Mounted



Model	A	B	C	D	E	F
Six figures	1.73 (44.0)	1.58 (40.0)	1.73 (43.9)	2.80 (71.1)	1.73 (44.0)	1.12 (28.6)
Seven figures	2.02 (51.4)	1.29 (32.7)	2.03 (51.6)	2.50 (63.5)	2.02 (51.4)	0.84 (21.2)

**RMF Series—Durant®****Product Description**

Model RMF Series of electric counters are designed to give accurate counts through a wide range of speeds up to 1000 cpm. It features a strong, silent, fast operating DC electromagnetic drive with a compact, dependable

built-in higher capacity rectifier for AC operation. The counter has a minimum of moving parts that never need lubrication under normal operating conditions. Compact and rigid, it

continues to operate dependably even when subject to severe shock and vibrations. Entirely enclosed to prevent damage from moisture and dust. Available in 6 or 7 figures.

**Product Selection****When Ordering Specify**

To determine a model number from the Product Selection table for Model

RMF Series Electronic Counters, consider:

- Number of figures
- Voltage
- Type of reset
- Type of mounting

RMF Series Counter—  
Electromechanical

**RMF Series Electromechanical Counters**

No. of Figures	Voltage	Reset	Mounting	Catalog Number	Order Number
6	24 DC	Knob	Panel	<b>6-Y-1-RMF-PM-24D</b>	<b>31013400</b>
6	24 AC	Knob	Panel	<b>6-Y-1-RMF-PM-24A</b>	<b>31013402</b>
7	24 DC	Knob	Panel	<b>7-Y-1-RMF-PM-24D</b>	<b>31019400</b>
7	115 AC	Knob	Base	<b>7-Y-1-RMF-115A</b> ①	<b>31025400</b>
7	230 AC	Knob	Base	<b>7-Y-1-RMF-230A</b>	<b>31025402</b>
7	115 AC	Non-reset	Base	<b>7-Y-13-RMF-115A</b> ①	<b>31026400</b>
7	115 AC	Knob	Panel	<b>7-Y-1-RMF-PM-115A</b> ①	<b>31026401</b>
7	115 AC	Non-reset	Panel	<b>7-Y-13-RMF-PM-115A</b> ①	<b>31026402</b>
7	230 AC	Knob	Panel	<b>7-Y-1-RMF-PM-230A</b>	<b>31026410</b>
6	115 AC	Non-reset	Base	<b>6-Y-13-RMF-115A</b> ①	<b>31039400</b>
6	230 AC	Non-reset	Base	<b>6-Y-13-RMF-230A</b>	<b>31039404</b>
6	24 AC	Non-reset	Base	<b>6-Y-13-RMF-24A</b>	<b>31039407</b>
6	230 AC	Knob	Panel	<b>6-Y-1-RMF-PM-230A</b>	<b>31066413</b>
6	115 AC	Knob	Panel	<b>6-Y-1-RMF-PM-115A</b> ①	<b>31066416</b>
6	115 AC	Keylock reset	Panel	<b>6-Y-12-RMF-PM-115A</b> ①	<b>31083403</b>
6	230 AC	Keylock reset	Panel	<b>6-Y-12-RMF-PM-230A</b>	<b>31083405</b>
7	115 AC	Keylock reset	Panel	<b>7-Y-12-RMF-PM-115A</b> ①	<b>31083409</b>
6	24 AC	Keylock reset	Panel	<b>6-Y-12-RMF-PM-24A</b>	<b>31083411</b>
6	24 DC	Keylock reset	Panel	<b>6-Y-12-RMF-PM-24D</b>	<b>31083415</b>
7	24 DC	Keylock reset	Panel	<b>7-Y-12-RMF-PM-24D</b>	<b>31083421</b>
7	230 AC	Keylock reset	Panel	<b>7-Y-12-RMF-PM-230A</b>	<b>31083427</b>
6	24 AC	Knob	Base	<b>6-Y-1-RMF-24A</b>	<b>31155400</b>
6	240 AC	Knob	Base	<b>6-Y-1-RMF-240A</b>	<b>31155401</b>
6	115 AC	Knob	Base	<b>6-Y-1-RMF-115A</b> ①	<b>31155402</b>
6	115 AC	Non-reset	Panel	<b>6-Y-13-RMF-PM-115A</b> ①	<b>31155405</b>
6	24 DC	Non-reset	Panel	<b>6-Y-13-RMF-PM-24D</b>	<b>31155442</b>
7	24 AC	Non-reset	Base	<b>7-Y-13-RMF-24A</b>	<b>31573400</b>
7	24 DC	Non-reset	Base	<b>7-Y-13-RMF-24D</b>	<b>31573401</b>
7	24 DC	Non-reset	Panel	<b>7-Y-13-RMF-PM-24D</b>	<b>33183400</b>
6	230 AC	Non-reset	Panel	<b>6-Y-13-RMF-PM-230A</b>	<b>33183404</b>
6	24 AC	Non-reset	Panel	<b>6-Y-13-RMF-PM-24A</b>	<b>33183405</b>

**Note**

① UL recognized.

**Technical Data and Specifications****General Specifications**

<b>Description</b>	<b>Specification</b>
Figures	6 or 7
Speed	Up to 1000 cpm
Figure size	3/16 in (4.8 mm) high, white-on-black background
Reset	Knob, key or non-reset
Mounting	Base or panel mount
Finish	Black frame and side covers
Electrical connections	Two-wire leads, 9 in (229 mm) long, AWG 22 (0.34 mm <sup>2</sup> ), stripped 0.38 in (9.5 mm)
Power requirements	7 watts
Coils	Various voltages and frequencies can be supplied on special order. Count coils are designed for continuous duty at rated voltage

**Dimensions**

Refer to table and illustrations on **Page 35** for information.

# 1.1

## Counters, Panel Meters, Tachometers and Timers

### Totalizers

1

#### ME Series—Durant®

##### Product Description

Small in size and price, but large in design versatility and model variety is the ME Series of miniature electric counters. Models in most popular AC or DC voltages operate on as little as 3 watts, with the non-reset

models measuring only 1 x 1.593 x 2.187 in (25.4 x 40.5 x 55.5 mm) and weighing just three ounces (85 grams).

Available in 4, 6 or 7 figures, the counters feature stainless steel self-lubricating shafts, nylatron pinions and a synchronous electromagnetic drive to assure accurate,

reliable, long life operation. Designed for mounting flexibility and aesthetic attractiveness, the miniature electric counters are available with three types of mounting and a glare retarding finish Delrin, with crisp easy-to-read numerals set close to a tamper-proof sealed figure window.

##### Standards and Certifications

- UL recognized

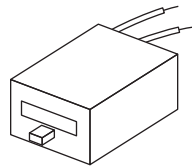


##### Product Selection

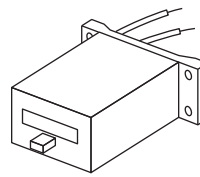
##### When Ordering Specify

When ordering ME Series Miniature Electric Counters, specify catalog numbers according to the features selected.

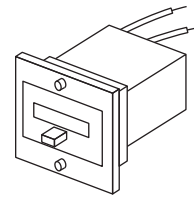
##### Bottom Mount Wire Leads



##### Base Mount Wire Leads



##### Panel Mount Wire Leads



ME Series Miniature Electric Counter



##### ME Series Miniature Electric Counters

No. of Figures	Voltage	Reset	Mounting	Catalog Number	Order Number
4	12 Vdc	Pushbutton	Bottom	4-Y-41312-401-MEQ	41312401
4	24 Vdc	Pushbutton	Bottom	4-Y-41312-402-MEQ	41312402
4	120 Vac	Pushbutton	Bottom	4-Y-41312-406-MEQ	41312406
4	240 Vac	Pushbutton	Bottom	4-Y-41312-407-MEQ	41312407
4	12 Vdc	Pushbutton	Base	4-Y-41313-401-MEQ	41313401
4	24 Vdc	Pushbutton	Base	4-Y-41313-402-MEQ	41313402
4	120 Vac	Pushbutton	Base	4-Y-41313-406-MEQ	41313406
4	240 Vac	Pushbutton	Base	4-Y-41313-407-MEQ	41313407
4	12 Vdc	Pushbutton	Panel	4-Y-41314-401-MEQ	41314401
4	24 Vdc	Pushbutton	Panel	4-Y-41314-402-MEQ	41314402
4	120 Vac	Pushbutton	Panel	4-Y-41314-406-MEQ	41314406
4	240 Vac	Pushbutton	Panel	4-Y-41314-407-MEQ	41314407

ME Series Miniature  
Electric Counter

## ME Series Miniature Electric Counters, continued

No. of Figures	Voltage	Reset	Mounting	Catalog Number	Order Number
6	12 Vdc	Non-reset	Bottom	6-Y-41119-401-ME	41119401
6	24 Vdc	Non-reset	Bottom	6-Y-41119-402-ME	41119402
6	120 Vac	Non-reset	Bottom	6-Y-41119-406-ME	41119406
6	240 Vac	Non-reset	Bottom	6-Y-41119-407-ME	41119407
6	12 Vdc	Non-reset	Base	6-Y-41345-401-ME	41345401
6	24 Vdc	Non-reset	Base	6-Y-41345-402-ME	41345402
6	120 Vac	Non-reset	Base	6-Y-41345-406-ME	41345406
6	240 Vac	Non-reset	Base	6-Y-41345-407-ME	41345407
6	12 Vdc	Non-reset	Panel	6-Y-41346-401-ME	41346401
6	24 Vdc	Non-reset	Panel	6-Y-41346-402-ME	41346402
6	120 Vac	Non-reset	Panel	6-Y-41346-406-ME	41346406
6	240 Vac	Non-reset	Panel	6-Y-41346-407-ME	41346407
7	12 Vdc	Non-reset	Bottom	7-Y-41238-401-ME	41238401
7	24 Vdc	Non-reset	Bottom	7-Y-41238-402-ME	41238402
7	120 Vac	Non-reset	Bottom	7-Y-41238-406-ME	41238406
7	240 Vac	Non-reset	Bottom	7-Y-41238-407-ME	41238407
7	12 Vdc	Non-reset	Base	7-Y-41337-401-ME	41337401
7	24 Vdc	Non-reset	Base	7-Y-41337-402-ME	41337402
7	120 Vac	Non-reset	Base	7-Y-41337-406-ME	41337406
7	240 Vac	Non-reset	Base	7-Y-41337-407-ME	41337407
7	12 Vdc	Non-reset	Panel	7-Y-41349-401-ME	41349401
7	24 Vdc	Non-reset	Panel	7-Y-41349-402-ME	41349402
7	120 Vac	Non-reset	Panel	7-Y-41349-406-ME	41349406
7	240 Vac	Non-reset	Panel	7-Y-41349-407-ME	41349407

## Technical Data and Specifications

## General Specifications

Description	Specification
Figures	4, 6 and 7
Speed	Up to 1000 cpm
Figure size	3/16 in (4.8 mm) high
Reset	Pushbutton and non-reset
Reset force	Pushbutton models only, 20 oz. (568 grams) maximum
Mounting	Base, bottom, panel
Finish	Black self-extinguishing plastic
Electrical connections	Wire leads, 10 in (254 mm) long, AWG 20, stripped 3/8 in (9.5 mm), and pin terminals
Power requirements	3W
Coils	Count coils are designed for continuous duty at rated voltage

# 1.1

## Counters, Panel Meters, Tachometers and Timers

### Totalizers

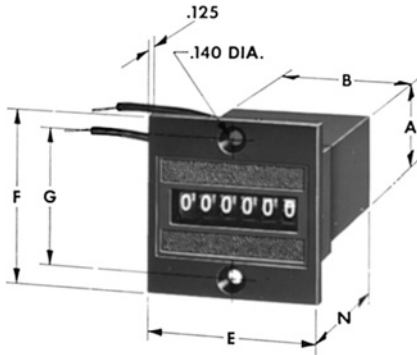
1

#### Dimensions

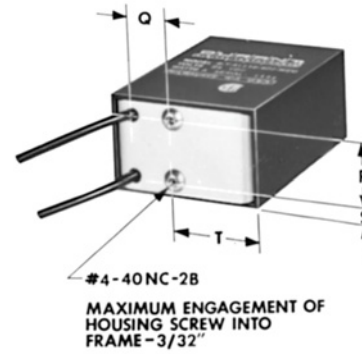
Approximate Dimensions in Inches (mm)

#### ME Series Counters

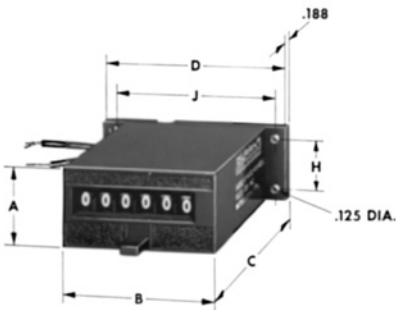
##### Panel Mounted



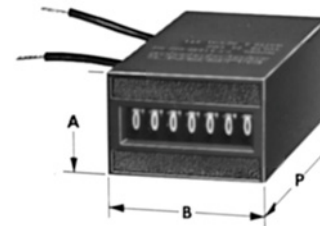
##### Bottom Mounted



##### Base Mounted



##### Bottom Mounted



#### ME Series Counters

##### 4 Figure Pushbutton Reset Counters

Dimension	Inches (mm)
A	1.00 (25.4)
B	1.60 (40.6)
C	2.64 (67.1)
D	2.19 (55.6)
E	1.80 (45.7)
F	1.80 (45.7)
G	1.40 (35.6)
H	0.69 (17.5)
J	1.88 (47.8)
K	0.50 (12.7)
L	0.49 (12.4)
M	0.94 (23.9)
N	2.45 (62.2)
P	2.45 (62.2)
Q	0.45 (11.4)
R	0.63 (16.0)
S	0.19 (4.8)
T	0.68 (17.3)

##### 6 and 7 Figure Non-Reset Counters

Dimension	Inches (mm)
A	1.00 (25.4)
B	1.60 (40.6)
C	2.38 (60.5)
D	2.19 (55.6)
E	1.80 (45.7)
F	1.80 (45.7)
G	1.40 (35.6)
H	0.69 (17.5)
J	1.88 (47.8)
K	0.50 (12.7)
L	0.49 (12.4)
M	0.94 (23.9)
N	2.19 (55.6)
P	2.19 (55.6)
Q	0.45 (11.4)
R	0.63 (16.0)
S	0.19 (4.8)
T	0.88 (22.4)

#### Recommended Panel Mount Cut-Outs

##### 4 Figure Counters Pushbutton Reset

1.72 x 1.11 (43.7 x 28.2)

##### 6 and 7 Figure Counters Non-Reset

1.72 x 1.11 (43.7 x 28.2)

## Electronic Totalizers



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## Electronic Totalizers

## Product Overview

Eaton's electric totalizers provide a flexible and accurate method of displaying count and measurement data in an easily readable format.

## Features

- LED and LCD readouts
- Variety of sizes and packages
- Programmable inputs and displays available

## Standards and Certifications

- Most products are UL certified (see individual product pages for details)
- CE





**1/32 DIN LCD Totalizers****Product Description**

Compact battery powered totalizers where AC power is unavailable.

**Features**

- Low price and high efficiency
- Large eight-digit LCD display, height of the figures 0.31 in (8 mm)
- Various counting modes like up/down differential available
- High voltage input for 10–260 Vac/Vdc voltage pulses
- IP65
- Screw terminals, RM 5 mm
- Lifetime of the battery approximately eight years
- Locking of the reset key
- Operating temperature 14° to 140°F (–10° to 60°C)
- All version of positive or negative counting edge
- Filter function for bounce-free counting with mechanical contacts

**Standards and Certifications**

- UL recognized
- CE marked

**Product Selection**

E5-024-C04\_

**1/32 DIN LCD Totalizers**

Description	Catalog Number
<b>Eight-Digit LCD Totalizer, Battery Power</b>	
4–30 Vdc powered, NPN/PNP 0.94 x 1.89 in (24 x 48 mm)	<b>E5-024-C0400</b>
10–120V input AC/DC powered, NPN only 0.94 x 1.89 in (24 x 48 mm)	<b>E5-024-C0408</b>
Count up/down 4–30 Vdc powered, NPN only, 0.94 x 1.89 in (24 x 48 mm)	<b>E5-024-C0410</b>

**Technical Data and Specifications****1/32 DIN LCD Totalizers**

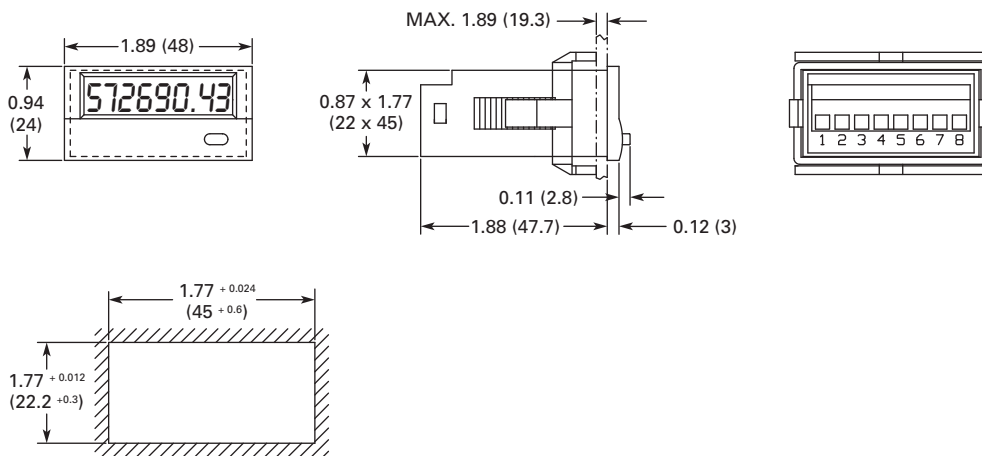
Description	Specification
Power supply	Non-replaceable lithium battery (lifetime approximately eight years at 68°F (20°C))
Display	LCD, eight-digits
Figure size	0.31 in (8 mm) high
Mode	Adding or subtracting (selectable), counting direction, differential counting or phase discriminator single or dual evaluation (selectable)
Display range	–9999999 to 99999999, with overflow display
Reset	Manual and electrical
Interference emissions	EN 55011 Class B, EN 61 000-6-2, EN 61010 Section 1 (only AC versions)
Housing	Dark gray RAL 7021
Operating temperature	14° to 131°F (–10° to 55°C)
Ambient temperature	14° to 140°F (–10° to 60°C)
Storage temperature	–4° to 158°F (–20° to 70°C)
Protection	IP65 (from front)
Weight	Approx. 1.76 oz (50g)

**1/32 DIN LCD Totalizers, continued**

Description	Specification
Counting inputs:	
Counting input of the DC version	Max. 30 Vdc
Slow counting input	Max. 30 Hz (NPN)
Fast counting input	Max. 12 kHz (PNP)
Switching level	NPN: Low 0–0.7V, High 3–30 Vdc PNP: Low 0–0.7V, High 3–30 Vdc
Counting Input of the high voltage versions	10–260 Vac/Vdc
Counting input	Optocoupler input, max. 30 Hz
Min. pulse time	16 ms
Switching level	Low: 0–2 Vac/Vdc High: 10–260 Vac/Vdc
Counting direction switching (only DC versions)	Contact input, open collector NPN (switching at 0 Vdc) Switching level, NPN—Low, 0–0.7V, High 3–5 Vdc
Reset input (only DC and high voltage)—	
Minimum pulse time	DC: 50 ms; high voltage: 16 ms
Contact input NPN	Low: 0–0.7V High: 3–30 Vdc
High voltage input	10–260 Vac/Vdc
Electrical reset key locking (for DC and AC)	Contact input, open collector NPN (switching at 0V) Switching level, NPN—Low, 0–0.7V, High 3–5 Vdc

**Dimensions**

Approximate Dimensions in Inches (mm)

**1/32 DIN LCD Totalizers**

1 **1/32 DIN LED Multifunction Totalizer/Timer/Ratemeter****Product Description**

Compact LED display for a variety of input signals.

**Features**

- Display counter adding and subtracting
- Position display
- Frequency counter/ratemeter
- Timer
- Display range: –199.999 to 999.999 with zero blanking
- Screw terminal
- Locking SET-key

**Standards and Certifications**

- UL recognized
- CE marked

**Product Selection**

E5-024-C04

**1/32 DIN LED Multifunction Totalizer/Timer/Ratemeter**

Description	Catalog Number
LED Single channel totalizer, 10–30 Vdc power 0.94 x 1.89 in (24 x 48 mm)	<b>E5-024-E0402</b>
LED multifunction totalizer/timer/ratemeter 10–30 Vdc power 0.94 x 1.89 in (24 x 48 mm)	<b>E5-424-E0402</b>
LED double-function totalizer/timer/ratemeter 10–30 Vdc power 0.94 x 1.89 in (24 x 48 mm)	<b>E5-524-E0402</b>
LED totalizer with quadrature, 10–30 Vdc power 0.94 x 1.89 in (24 x 48 mm)	<b>E5-024-E0432</b>

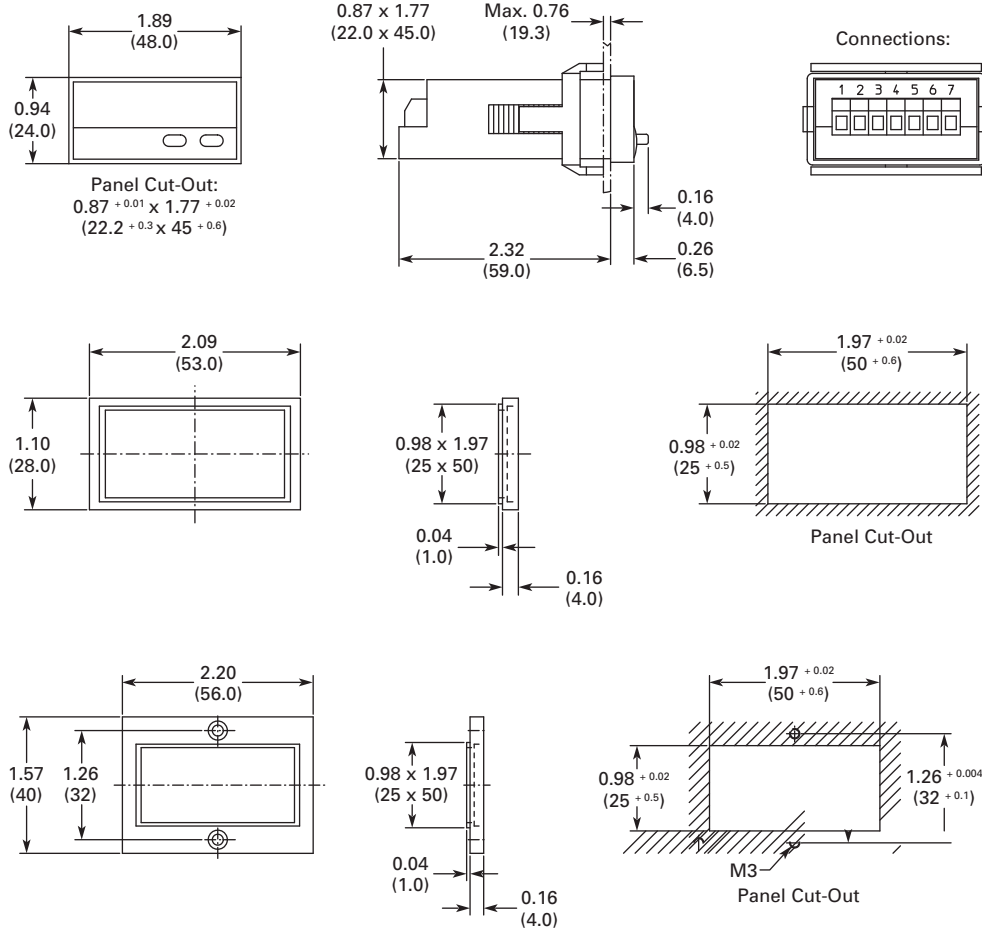
**Technical Data and Specifications****General Specifications**

Description	Specification
Supply voltage	10–30 Vdc with reverse polarity protection
Current consumption	Max. 55 mA
Display	Six-digit red, seven-segment LED display
Figure size	0.31 in (8 mm) high
Data backup	EEPROM
Housing	Dimension 3.78 x 1.89 in (48 x 24 mm) according to DIN 43 700; RAL 7021 gray
Polarity of inputs	Programmable, NPN or PNP
Input resistance	Approx. 10k ohms
Counting frequency	60 kHz, can be damped to 30 Hz, position display max. 25 kHz
Resolution	Timer 0.001 sec.
Reset time	5 ms
Level of inputs	
High	0.6 x U <sub>B</sub> –30 Vdc
Low	0–0.2 x U <sub>B</sub> (Vdc)
Error	
Tachometer	<0.1%
Timer	<50 ppm
Ambient temperature	4° to 131°F (–20° to 55°C)
Storage temperature	–13° to 167°F (–25° to 75°C)
EMC	According to EC EMC directive 89/36/EWG
Immunity to interference	EN 61 000-6-4/ EN 55011 Class B
Emitted interference	EN 61 000-6-2
Protection	IP65 (from front)
Weight	Approx. 5.29 oz (150g)

## Dimensions

Approximate Dimensions in Inches (mm)

### 1/32 DIN LED Multifunction Totalizer/Timer/Ratemeter



# 1.1

## Counters, Panel Meters, Tachometers and Timers

### Totalizers

1

#### Courier Series—Durant®

##### Product Description

Eaton's Courier Series is a high quality totalizer powered by a replaceable lithium battery.

##### Features

- Eight-digit totalizer
- 1/Tau ratemeter
- Scaling capabilities
- Remote reset terminal
- 0.43 in (10.9 mm) display
- Front panel reset
- NEMA 4X

##### Standards and Certifications

- CE marked



#### Product Selection

##### When Ordering Specify

When ordering Courier Series Electronic Totalizers and Ratemeters, specify order numbers according to the features selected.

#### Courier Series

#### Courier Series, Eight-Digit LCD



Description	Catalog Number
Totalizer, battery	53300400
Add/subtract (10k Hz, PNP input) totalizer, battery	53300401
Add/subtract (20 Hz, NPN/contact input) totalizer, battery	53300402
Quadrature (10k Hz, PNP input) totalizer, battery	53300403
Totalizer/ratemeter, battery	53300405
Totalizer/ratemeter at 100 Hz, battery	53300465
RMF panel mount totalizer, key reset, 60–160 Vac/Vdc count input	53300800
RMF panel mount totalizer, dry contact input	53300-850
RMF panel mount totalizer, 60–160 Vac/Vdc count input	53300-851
Totalizer—extended temperature range, battery	53301400
Totalizer—1/Tau ratemeter—extended temperature range	53301404
Totalizer/ratemeter—extended temperature range, battery	53301405
Totalizer/ratemeter, mag pickup, battery	53301475
Backlight totalizer, battery	53302400
Backlight add/subtract (10k Hz, PNP input) totalizer, battery	53302401
Backlight add/subtract (20 Hz, NPN/contact input) totalizer, battery	53302402
Backlight quadrature (10k Hz, PNP input) totalizer, battery	53302403
Backlight totalizer/ratemeter, battery	53302405

## Technical Data and Specifications

### General Specifications

Description	Specification
<b>Power</b>	
Internal battery	3V, lithium
Life expectancy	5 years +
Replacement part	36367-202
<b>Backlight</b>	
Backlight	10–30 Vdc at 30 mA max. ① Reverse polarity protected
<b>Physical</b>	
Operating temperature	–4° to 158°F (–20° to 70°C)
Storage temperature	–4° to 158°F (–20° to 70°C)
Operating humidity	60% non-condensing
Weight	2.2 oz (62g) net
Figure size	0.43 in (10.9 mm) high
Front panel rating	NEMA 4X when mounted with gasket provided
Case material	Cyclocac X-17
<b>Totalizer</b>	
Type	UP counting
Digits	Eight
<b>Count Accuracy</b>	
Operated within specifications	100%
<b>DC Common (Terminal 1) Count Inputs</b>	
Input B (terminal 2) low speed input designed for contact closures to DC common	
Speed	0 to 20 Hz
Min. low time	10 ms
Min. high time	40 ms
Input impedance	101k ohms
Voltage thresholds	
Low	0–0.4 Vdc
High	2.0–28 Vdc
Max. high	28 Vdc
Input A (terminal 3) high speed input requiring a voltage source such as a current sourcing sensor or a current sinking sensor used with the provided pull up resistors	
Speed	0 to 10 kHz
Min. low time ②	80 ms
Min. high time ②	20 ms
Input impedance	2k ohms above 5 Vdc
Voltage thresholds	
Low	0–1.2 Vdc
High	2.0–28 Vdc
Max. high	28 Vdc
<b>Reset Input</b>	
Reset input (terminal 4) designed for contact closures to DC common	
Min. low ③	0.25 to 1 sec. (reset is maintained)
Voltage thresholds	
Low	0–0.4 Vdc
High	2.0–28 Vdc
<b>Front Panel Reset Enable</b>	
Front panel reset enable (terminal 5)	
Operation	Level sensitive (maintained)

#### Notes

- ① Derate operating temperature 1°C/volt above 17 Vdc.
- ② The times are with a 0–5.0V swing.
- ③ The required pulse width varies with count speed, scale factor and number of digits displayed.

# 1.1

## Counters, Panel Meters, Tachometers and Timers

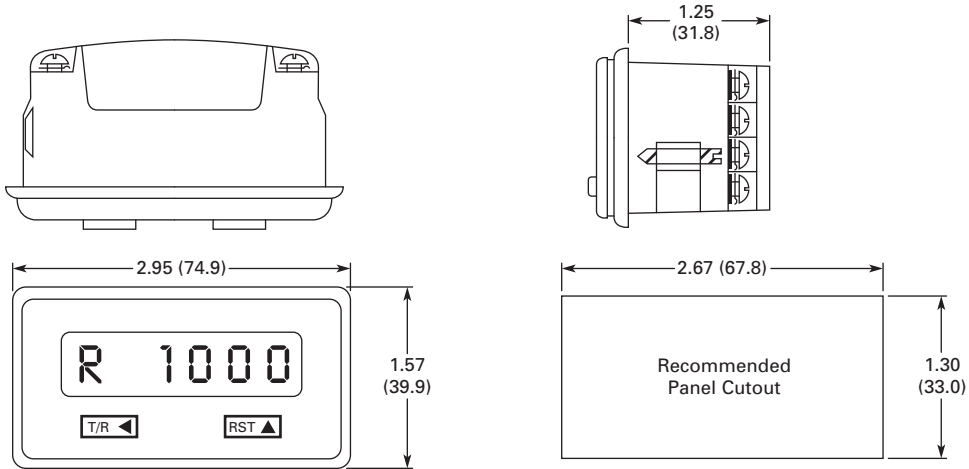
### Totalizers

#### 1

#### Dimensions

Approximate Dimensions in Inches (mm)

#### Courier Series



**1/8 DIN LED Multifunction Totalizer/Timer/Ratemeter****Product Description**

LED display for a variety of input signals.

**Features**

- Display counter adding and subtracting
- Position display
- Frequency counter/ratemeter
- Timer, res. up to 0.001 second
- Programmable mode
- Display range: -199.999 to 999.999 with zero blanking
- Connection with screw terminal
- Locking SET-key for reset

**Standards and Certifications**

- UL recognized
- CE marked

**Product Selection**

E5-496-E040

**1/8 DIN LED Multifunction Totalizer/Timer/Ratemeter**

Description	Catalog Number
<b>LED Multifunction Counter/Timer/Ratemeter</b>	
90–260 Vac power 3.78 x 1.89 in (96 x 48 mm)	E5-496-E0401
10–30 Vdc power 3.78 x 1.89 in (96 x 48 mm)	E5-496-E0402

**Technical Data and Specifications****General Specifications**

Description	Specification
Supply voltage	10–30 Vdc with reverse polarity protection; 90–260 Vac
Current consumption	Max. 50 mA 6 VA
Display	Six-digit red, seven-segment LED display
Figure size	0.55 in (14 mm) high
Data backup	EEPROM
Housing	Dimension 3.78 x 1.89 in (96 x 48 mm) according to DIN 43 700; RAL 7021 gray
Polarity of inputs	Programmable, NPN or PNP for all inputs
Input resistance	Approx. 10k ohms
Counting frequency	60 kHz, can be damped to 30 Hz depending on operating mode at position display max. 25 kHz ①
Reset time	5 ms
Resolution timer	Up to 0.001 second
Input switching level	
DC version (standard version)	High: 0.6 x U <sub>B</sub> –30 Vdc Low: 0–0.2 x U <sub>B</sub> (Vdc)
AC version	High: 12–30 Vdc Low: 0–4 Vdc
Voltage supply for sensors	24 Vdc ±15%/100 mA at AC versions
Accuracy	
Tachometer	<0.1%
Timer	<50 ppm
Ambient temperature	–4° to 149°F (–20° to 65°C)
Storage temperature	–13° to 167°F (–25° to 75°C)
EMC	According to EC EMC directive 89/36/EWG
Immunity to interference	EN 61 000-6-4/ EN 55011 Class B
Emitted interference	EN 61-000-6-2
Protection	IP65 (from front)
Weight	Approx. 5.29 oz (150g)

**Note**

① For further specifications, please refer to the user manual.



# 1.1

## Counters, Panel Meters, Tachometers and Timers

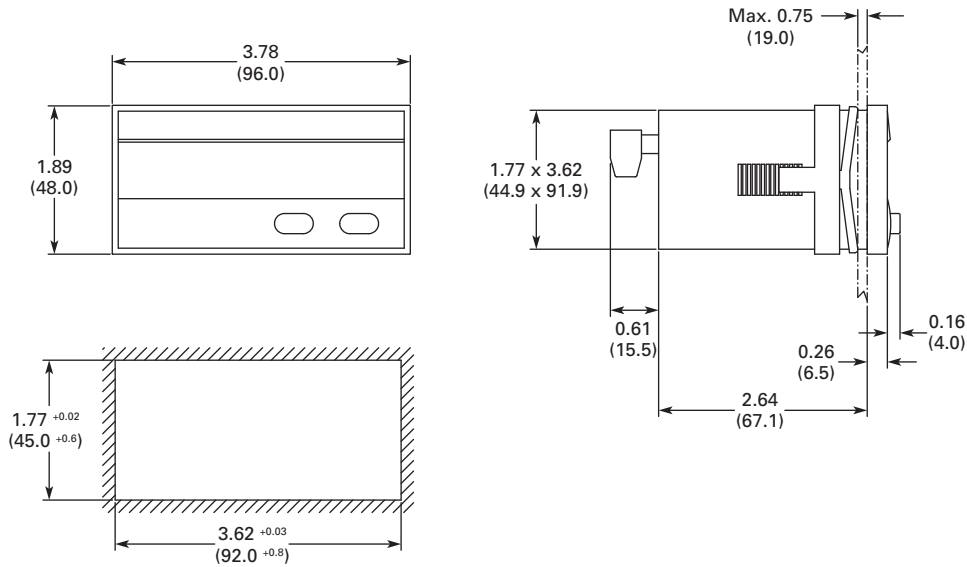
### Totalizers

#### 1

#### Dimensions

Approximate Dimensions in Inches (mm)

#### 1/8 DIN LED Multifunction Totalizer/Timer/Ratemeter



**Eclipse Series—Durant®****Product Description**

High visibility LED readout with a variety of output options.

**Features**

- 1/8 DIN cutout
- NEMA 4X front panel
- Universal AC power supply (85–265 Vac)
- DC power models (9–30 Vdc)
- Removable screw terminals
- Short depth: 3.6 in (91 mm)
- Front panel programming

**Standards and Certifications**

- UL and cUL listed
- CE marked

**Product Selection****Eclipse Series****Eclipse Series Totalizer, Six-Digit LED**

Description	Catalog Number
9–30 Vdc power	57700480
85–265 Vac power	57701480
Analog out, 9–30 Vdc power	57700482
Analog out, 85–265 Vac power	57701482
RS-485 out, 9–30 Vdc power	57700484
RS-485 out, 85–265 Vac power	57701484
RS-485 out and analog out, 9–30 Vdc power	57700486
RS-485 out and analog out, 85–265 Vac power	57701486

**Technical Data and Specifications****General Specifications**

Description	Specification
<b>Mechanical</b>	
Cutout dimensions	3.62 in W x 1.77 in H (92 mm x 45 mm) DIN standard
Outline dimensions	4.04 in W x 2.19 in H x 3.87 in D (103 mm x 56 mm x 98 mm) 3.60 in (92 mm) maximum depth in panel
Enclosure	Plastic with polyester front label
Connectors	Up to six depluggable terminal blocks
<b>Environmental</b>	
Operating environment	Indoor use to 2000 meters
Temperature	
Operating	32° to 122°F (0° to 50°C)
Storage	–4° to 158°F (–20° to 70°C)
Humidity	0 to 85% RH, non-condensing
Vibration	2.5 Gs, 30 to 200 Hz
Shock	30 Gs, 11 ms half sinewave
EMC	Immunity to EN 50082-2 (heavy industrial) Emissions to EN 50081-2 (heavy industrial)
Front panel	NEMA 4X when mounted with gasket provided
CE EMC	Immunity and emissions requirements were met using shielded wiring on the RS-485, analog output and pulse input/ power lines. The shields were connected to earth ground at the Eclipse end of the shields.
Pollution degree 2	Overvoltage Category II
<b>Input Power</b>	
AC powered models (57701-4XX)	
Input power	85–295 Vac, 47–63 Hz, 20 VA
External fuse	0.2A, 250 Vac, time delay (T200 mA, 250V)
Isolation dielectric strength	2300 Vac
DC powered models (57700-4XX)	
Input power	9–30 Vdc, 12 VA
External fuse	2.0A, 50 Vdc, time delay (T2A, 50V)
Reverse voltage protection	Yes
Isolation dielectric strength	2300 Vac to signal outputs and relays, 500 Vac to RS-485 and analog outputs

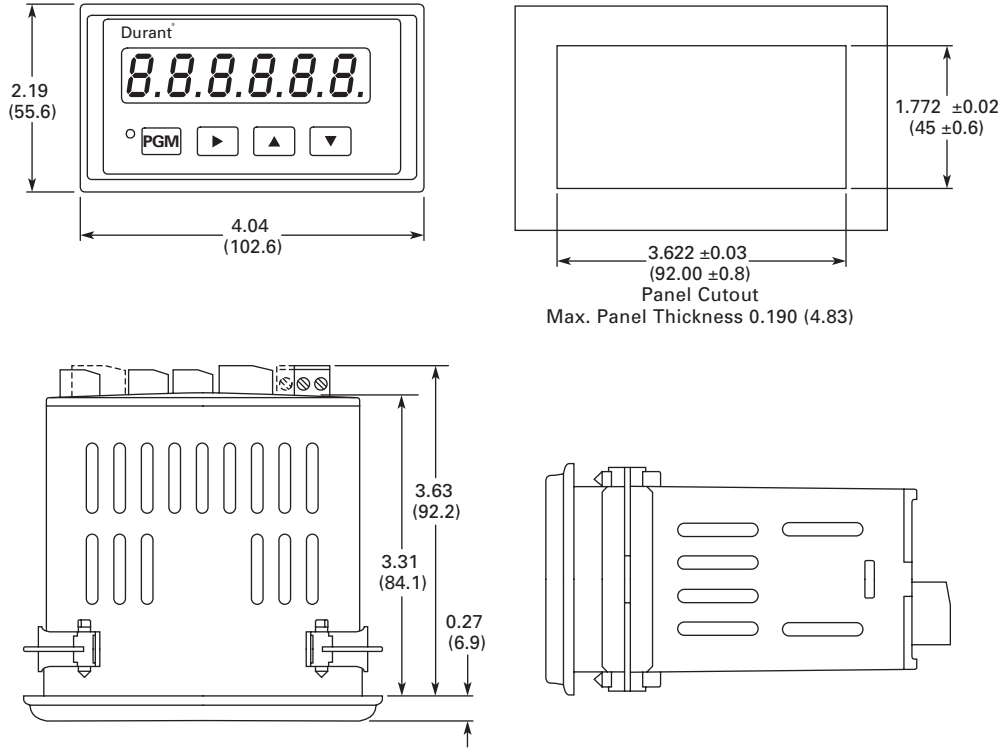
## General Specifications, continued

Description	Specification
<b>Human Interface</b>	
Display	+6, -5 digits
Type	0.56 in (14.2 mm) high, seven segment, red LED
<b>Data Retention</b>	
Memory type	EEPROM, no batteries required
Duration	100 years
<b>Count Signal Input</b>	
Sensor type	Sink or source, DIP switch selectable
Input impedance	4.75k ohms to +5 Vdc or 34.9k ohms to ground
Thresholds	
High	3.5–28 Vdc
Low	0–1.9 Vdc, for single ended signals
Magnetic pickup range	200 mV p-p to 65V rms into 34.9k ohms
Slow response	200 Hz max. (DIP switch 2 and/or 5 ON)
Fast response—count mode: A or B Add/add, add/subtract, add w/Inh	8250/8250
Fast response—count mode: A and B Add/add, add/subtract, add w/Inh	3000/3000
Quad x1, Quad x2	3250
Quad x4	2000
<b>Control Inputs</b>	
Sensor type	Sink only
Input impedance	4.75k ohms to +5 Vdc
Thresholds	
High	3.5 to 28 Vdc
Low	0–1.9 Vdc
Response	25 ms maximum (5V signal)
<b>Accessory Power Output</b>	
Voltage	12 Vdc +10%/–13%
Current	75 mA max.
Protection	Short-circuit protected

**Dimensions**

Approximate Dimensions in Inches (mm)

**Eclipse Series Totalizer**



1

#### President Series—Durant®

##### Product Description

Eaton's President Series totalizers are heavy-duty electronic totalizers with two available sizes.

##### Features

- Eight-digit, LED display, 0.56 in (14 mm)
- Programmable decimal point and count and rate scaling
- 15 Vdc at 100 mA output power
- Rear panel screw terminals
- NEMA 4 front panel

##### Standards and Certifications

- UL listed
- CSA marked
- CE marked



#### Product Selection

##### President Series President Series Totalizers



Description	Catalog Number
115/230 Vac, LED red display	58811400
115/230 Vac, LED red display, 1/Tau ratemeter	58815400
115 Vac, seven-digit LED red display, basic pulse count	57810400
115/230 Vac, LED red display	58810400
Feet/inches totalizer	57810-402

#### Technical Data and Specifications

##### General Specifications

Description	Specification
<b>Power Requirements</b>	
AC operation	115/230 Vac (+10%, -20%) 47-63 Hz
DC operation	11-28 Vdc
Power	18 watts
DC power output <sup>①</sup>	15 Vdc (+1, -2). 150 mA if powered from AC or less than 24 Vdc 100 mA if powered from 24 Vdc or greater
<b>Environment</b>	
Operating temperature	32° to 130°F (0° to 55°C)
Storage temperature	-40° to 160°F (-40° to 70°C)
Operating humidity	85% non-condensing relative
<b>Physical</b>	
Memory types	PROM, RAM, non-volatile NVRAM

##### Note

<sup>①</sup> DC power output is only regulated if unit is powered by AC or greater than 18.5 Vdc.

## General Specifications, continued

Description	Specification
<b>Counter</b>	
Count range	Eight digits (0 to 99,999,999) with rollover
Offset range	Eight digits (0 to 99,999,999) (offset is used to reset to a non-zero number)
Count modes	Count with add and subtract inputs
	Count with up/down direction input (hardware doubling for above modes is provided)
	Count with count inhibit input
	Quadrature Doubled quadrature
Count speed (scale factor of 1.0000 assumed) 58811400 and 58815400	0 to 7,500 counts per second (CPS) with Durant shaft encoders or solid-state sensors
	0 to 3,750 CPS when hardware doubling is implemented or when quadrature shaft encoders are used
	0 to 150 CPS when low frequency is selected
57810400, 58810400 and 57810-402	0 to 10,000 counts per second (CPS) with Durant shaft encoders or solid-state sensors with internal pull-up resistor
	0 to 7,500 CPS minimum for sensors with open collector transistor output
	0 to 5,000 CPS when hardware doubling is implemented
<b>Count Input Ratings</b> <sup>①</sup>	
Input voltage	
High state (logical "1", sensor off or contact open)	10.5–24.5 Vdc when control is powered by AC line
	7.0–24.5 Vdc when control is powered by 11 Vdc
	11.0–24.5 Vdc when control is powered by 16 Vdc
Low state (logical "0", sensor on or contact closed)	0–4.5 Vdc when control is powered by AC line
	0–3.3 Vdc when control is powered by 11 Vdc
	0–4.8 Vdc when control is powered by 16 Vdc
Input impedance	
	6800 ohms to 15 Vdc when control is powered by AC line
	6800 ohms to 10 Vdc when control is powered by DC supply
Input current	
	20 mA peak, 3 mA steady state
Input response	
High state (logical "1", sensor off or contact open)	High speed (low speed jumpers not connected)
	110 $\mu$ S minimum at 15 Vdc (6,800 ohms to +DC)
	160 $\mu$ S minimum at 13.5 Vdc (50,000 ohms to +DC)
High state (logical "1", sensor off or contact open)	Low speed (low speed jumpers connected)
	5.5 ms minimum at 15 Vdc (6,800 ohms to +DC)
	7.5 ms minimum at 13.5 Vdc (50,000 ohms to +DC)
Low state (logical "0", sensor on or contact closed)	High speed (low speed jumpers not connected)
	20 $\mu$ S minimum at 0.1 Vdc (0 ohms to DC common)
	45 $\mu$ S minimum at 1.5 Vdc (500 ohms to DC common)
Low state (logical "0", sensor on or contact closed)	Low speed (low speed jumpers connected)
	1.0 ms minimum at 0.1 Vdc (0 ohms to DC common)
	2.0 ms minimum at 1.5 Vdc (500 ohms to DC common)

**Note**

<sup>①</sup> The count inputs are designed to work with current sinking sensors (open-collector NPN transistor output with or without passive pull-up resistor) or contact closures to DC common.

## General Specifications, continued

Description	Specification
<b>Scale Factor</b>	
Range	Five digits (0.0001 to 9.9999)
<b>Control Inputs</b>	
Input voltage	
High state (logical "1", contact open)	15 Vdc maximum
Low state (logical "0", contact closed)	1.2 Vdc maximum
Input impedance	4.75k ohms to +5 Vdc
Threshold	
High	+3.5 to +22 Vdc
Low	+0.0 to +1.0 Vdc
Response time <sup>①</sup>	
Min. high	5.3 ms
Min. low	3.9 ms
<b>Diagnostic Modes</b>	
Diagnostic modes	ROM checksum
	RAM bit test
	NVRAM read/write test
	NVRAM store test
	NVRAM checksum
	Watchdog timer
	Display and LED indicator test
<b>Counter Operating Modes</b>	
Reset	Reset to zero
	Reset to offset value
Maintained	Reset
Momentary	Reset
<b>Communications</b>	
Interface type	Dual port 20 mA current loop
Speed	110, 300 and 1200 baud, user selectable
Data type	Standard ASCII code
Format	Start bit, 7 ASCII data bits, parity bit, one or two stop bits (even parity for serial data output, no parity for serial data input)
Information transmitted	Count value
	Offset value
	Scale factor
Information received	Print request
	Offset value
	Scale factor

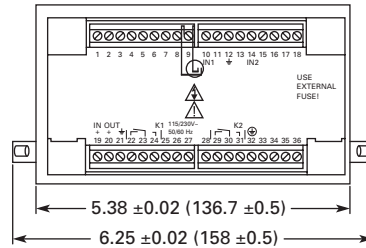
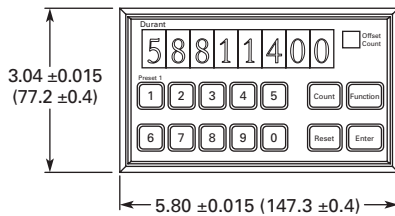
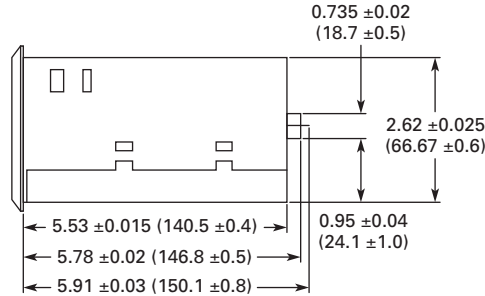
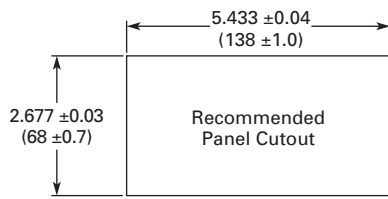
**Note**

- <sup>①</sup> The reset and unlatch signals will both occur in less than 200 microseconds after the input signal is detected. The start of the print will occur within 2 milliseconds after the input is detected if the unit is not counting.

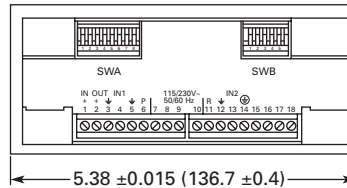
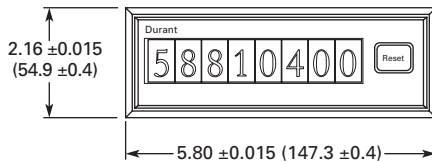
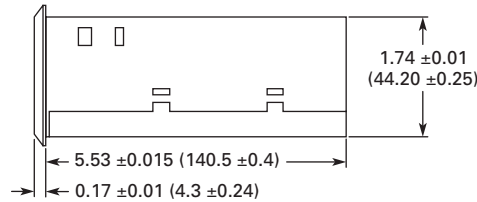
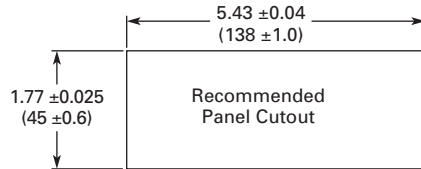
## Dimensions

Approximate Dimensions in Inches (mm)

### Standard President Size



### Compact President Size





**Ambassador Series—Durant®****Product Description**

Eaton's Ambassador Series is our most noise-immune totalizer available. Various counting modes can be set by the user.

**Features**

- AC/DC powered, two-line LCD display
- Eight-digit totalizer
- 1/Tau ratemeter
- Totalizer and ratemeter scaling
- Four user-configurable control inputs
- Two solid-state outputs
- RS-485 serial communications

**Standards and Certifications**

- UL listed
- CE marked

**Product Selection****Ambassador Series Totalizers**

Description	Catalog Number
10–15 Vdc LCD	<b>57600400</b>
115 Vac LCD	<b>57601400</b>
230 Vac LCD	<b>57602400</b>

**Technical Data and Specifications****General Specifications**

Description	Specification
<b>Power Input</b>	
AC operation	115 Vac ( $\pm 15\%$ ) std., 50 to 60 Hz, 7W 230 Vac ( $\pm 15\%$ ) opt., 50 to 60 Hz, 7W
DC operation	10–15 Vdc opt., 300 mA maximum
DC power output	12 Vdc ( $\pm 25\%$ ), 100 mA maximum (includes all line and load variations)
<b>Environmental</b>	
Operating temperature	32° to 131°F (0° to 55°C)
Storage temperature	–4° to 158°F (–20° to 70°C)
Operating humidity	85% relative, non-condensing
Rating	NEMA 4 when mounted with gasket provided
<b>Totalizer</b>	
Type	Bi-directional
Digits	Eight
Scaler range	0.00001 to 9.99999
Decimal point	Five positions, programmable
<b>Totalizer Count Speeds <sup>①</sup></b>	
Maximum speed—solid-state (high speed)	
Mode	Input A/Input B
Add/sub	20 kHz
Add/add	20 kHz
Count/direction	15 kHz
Count x 2/direction	7.5 kHz
Quadrature	6.5 kHz
Quadrature x 2	6.5 kHz
Maximum speed—contact (low speed)	
Mode	Input A/Input B
Add/sub	40 kHz
Add/add	40 kHz
Count/direction	0 kHz

**Note**

<sup>①</sup> The maximum count speed depends on the selected count mode. All maximum speeds are shown with square waves (50% duty cycle) input.

## General Specifications, continued

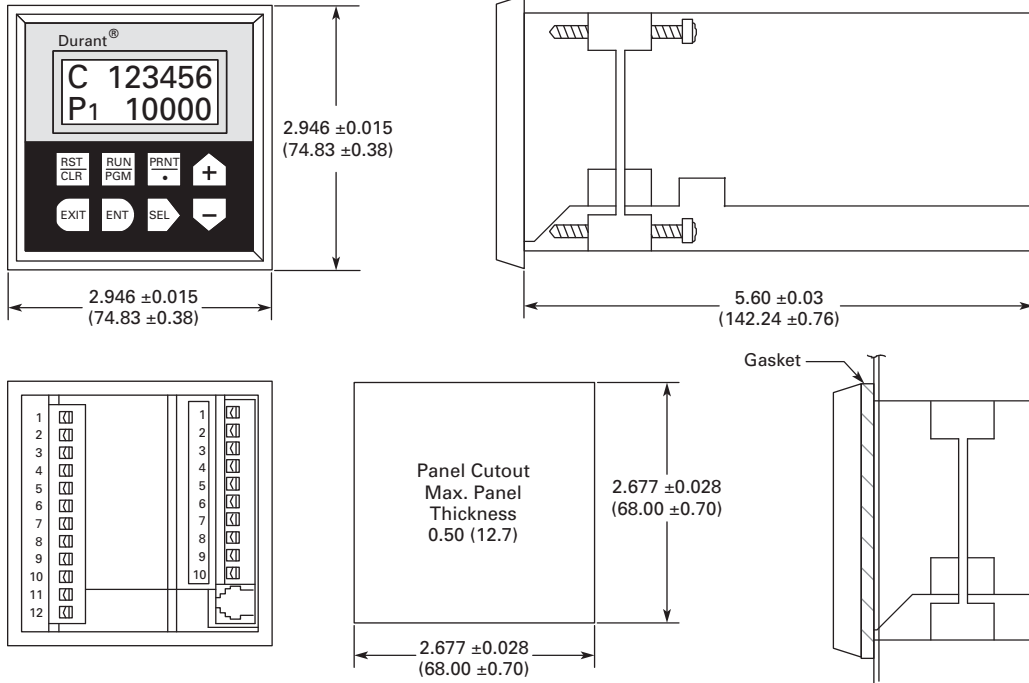
Description	Specification
<b>Count Inputs</b>	
Sink	
Impedance	4.6k ohms to +5 Vdc
Voltage	
High	3.5 to 34.0 Vdc
Low	0.0 to 1.9 Vdc
Source (high)	
Impedance	2.3k ohms to common
Voltage	
High	3.5 to 17.0 Vdc (100% duty cycle)
Low	0.0 to 1.9 Vdc
Source (low)	
Impedance	2.3k ohms to common
DC voltage	
High	0.6 to 17.0 Vdc
Low	-17.0 to -0.6 Vdc
AC voltage	17 Vac (48V peak-peak) maximum
<b>Control Inputs</b>	
Impedance	4.7k ohms to +5 Vdc
Voltage	
High	+3.7 to +24 Vdc
Low	0.0 to 0.9 Vdc
Response	Minimum low 15 ms, minimum high 15 ms
<b>Transistor Outputs (2)</b>	
Type	NPN open collector with transient protection
Maximum voltage (OFF state)	30 Vdc
Maximum current (ON state)	200 mA at 1.3 Vdc
<b>Communication</b>	
Type	RS-485
Format	1 start bit, 7 data bits (ASCII), 1 parity bit, 1 stop bit
Protocol	Opto-22 compatible
Speed	300, 1200, 2400, 4800, 9600 and 19200 baud
Parity	Odd, even, none (space transmitted, ignore received)
<b>Count Accuracy</b>	
Operating within specifications	100% when operated within the specified count speeds and count signal high and low times
<b>Rate Indicator</b>	
Type	1/Tau
Digits	Six
Scaler range	0.00001 to 99999
Decimal point	Five positions, programmable
Accuracy	±0.015% of reading
Update time	1 second, fixed
Zero time	10 seconds, fixed
<b>Connections</b>	
Type	Dual depluggable screw terminal strips
Conductor size	14–22 AWG (2.1–0.38 mm <sup>2</sup> ), 600V, solid, stranded or fused (preferred)

#### 1

#### Dimensions

Approximate Dimensions in Inches (mm)

#### Ambassador Series Totalizer



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