Description
A 6 figure general purpose, rugged, electromechanical counter, either panel or base mounted, with manual knob reset, key reset, or non-reset. Frame and housing provides rigid support for accurate alignment and trouble-free use. Distinctive numerals enhance visibility under adverse viewing conditions.

Features
- Panel or base mount
- Rigid support for accurate alignment
- Enhanced visibility
- Manual knob, key or non-reset

Specifications

| Figures: | 6 figures, white on black, 0.19” [5mm] high |
| Reset: | Knob, lock and key, or non-reset |
| Speed: | 1,000 counts/minute (min. 30ms - on, 30ms - off) |
| Voltage: | 24, 115, 230 VAC or 24 VDC (+/- 10%, but not to exceed 10 volts) |
| Power: | 7.8 watts (nominal) |

Options
- Voltages
- Lead lengths
- Terminations
- Mounting
- 1071-024S - additional key for model 1026

Models

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1006</td>
<td>230VAC, base mount, knob reset</td>
</tr>
<tr>
<td>2-1006</td>
<td>115VAC, base mount, knob reset</td>
</tr>
<tr>
<td>3-1006</td>
<td>24VAC, base mount, knob reset</td>
</tr>
<tr>
<td>8-1006</td>
<td>24VDC, base mount, knob reset</td>
</tr>
<tr>
<td>2-1016</td>
<td>115VAC, base mount, non-reset</td>
</tr>
<tr>
<td>P1-1006</td>
<td>230VAC, panel mount, knob reset</td>
</tr>
<tr>
<td>P2-1006</td>
<td>115VAC, panel mount, knob reset</td>
</tr>
<tr>
<td>P3-1006</td>
<td>24VAC, panel mount, knob reset</td>
</tr>
<tr>
<td>P8-1006</td>
<td>24VDC, panel mount, knob reset</td>
</tr>
<tr>
<td>P2-1016</td>
<td>115VAC, panel mount, non-reset</td>
</tr>
<tr>
<td>P31-1026</td>
<td>230VAC, panel mount, lock and key reset</td>
</tr>
<tr>
<td>P32-1026</td>
<td>115VAC, panel mount, lock and key reset</td>
</tr>
<tr>
<td>P33-1026</td>
<td>24VAC, panel mount, lock and key reset</td>
</tr>
<tr>
<td>P38-1026</td>
<td>24VDC, panel mount, lock and key reset</td>
</tr>
</tbody>
</table>

* Items in bold are normally in factory stock.

Dimensions

Base Mount

Mounting holes: 0.15” [3.8mm] Dia.

Panel Mount

Screws provided: 6-32 x 0.6 [15.2mm]
Panel cutout: 3.85” x 1.75” [97.8 x 44.5mm]

Lock and Key Reset

Screws provided: 6-32 x 0.6 [15.2mm]
Panel cutout: 4.88” x 1.75” [124.0 x 44.5mm]

Applications

Molding machines

Punch press

Printing presses

Test labs

Secondary Machines
Model 10

Electromechanical Totalizer

Description

A 7 figure, rugged, electromechanical counter, either panel or base mounted, with manual knob reset, key reset, or non-reset. Frame and housing provides rigid support for accurate alignment and trouble-free use. Large, easy-to-read numerals assure readability.

Features

- 7 figure
- Panel or base mount
- Rigid support for accurate alignment
- Large easy to read numerals

Options

- Voltages
- Lead lengths
- Terminations
- Wheel color

Specifications

Figures: 7 figures, white on black, 0.19'' [5mm] high
Reset: Knob, lock and key, or non-reset
Speed: 1,000 counts/minute
  (min. 30ms - on, 30ms - off)
Voltage: 24, 115, 230 VAC or 24 VDC
  (+/- 10%, but not to exceed 10 volts)
Power: 7.8 watts (nominal)

Models Description
1-1007 230VAC, base mount, knob reset
2-1007 115VAC, base mount, knob reset
3-1007 24VAC, base mount, knob reset
8-1007 24VDC, base mount, knob reset
2-1017 115VAC, base mount, non-reset

Mounting: Base, panel, or behind the panel
Terminations: (2)#22 AWG 105°C wire leads, 8'' [203mm] long
Operating Life: Beyond 50 million counts
Temp. Range: -15°F to +140°F [-26°C to +60°C]
Approvals: UL Recognized, CSA Certified, CE Compliant
Weight: 14 to 18 oz. [397 to 510g]

Dimensions

Base Mount

Panel Mount

Screws provided: 6-32 x 0.6 [15.2mm]
Panel cutout: 3.85'' x 1.75'' [97.8 x 44.5mm]

Lock and Key Reset

Screws provided: 6-32 x 0.6 [15.2mm]
Panel cutout: 4.88'' x 1.75'' [124.0 x 44.5mm]

Applications

Molding machines
Punch press
Printing presses
Test labs
Secondary Machines

www.redingtoncounters.com
Model 40

Electromechanical
Totalizer

Description

The Model 40 is a low cost, non-reset totalizer, available with 6-7 figures (white on black background). A wide choice of operating voltages and mountings make this product adaptable for most applications. The Model 40 is an ideal solution for applications that require low cost and product reliability.

Features

- Low cost
- Small size
- DC and AC

Options

- 6 or 7 figure
- Multiple mounting choices
- Voltages

Specifications

Figures: 6 or 7 figures, white on black, 0.12" (3 mm) high
Reset: Non-reset
Speed: 600 counts/minute (min. 50ms - on, 50ms - off)
Voltage: 115 VAC, 5, 12 or 24 VDC (+ 10/-15% tolerance)
Power: 1.4 watts AC, 1.0 watts DC (nominal)
Mounting: Rear, behind the panel, snap-in, base or PCB mount

Terminations: (2)#22 AWG 221°F [105°C] wire leads, 10.5" [266.7mm] long or (2) 0.03" [0.8mm] Dia. pins for PCB mounting

Operating Life: Beyond 3 million counts
Temp. Range: +23°F to +104°F [-5°C to +40°C]
Weight: Less than 1 oz. [28g]

Models

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-4016</td>
<td>115VAC, 6 figure, rear mount, wire leads</td>
</tr>
<tr>
<td>R2-4016</td>
<td>115VAC, 6 figure, behind the panel mount, wire leads</td>
</tr>
<tr>
<td>R9-4016</td>
<td>12VDC, 6 figure, behind the panel mount, wire leads</td>
</tr>
<tr>
<td>SR2-4016</td>
<td>115VAC, 6 figure, snap-in panel mount, wire leads</td>
</tr>
<tr>
<td>T2-4016</td>
<td>115VAC, 6 figure, PCB mount, pins</td>
</tr>
<tr>
<td>V8-4016</td>
<td>24VDC, 6 figure, V-base mount, wire leads</td>
</tr>
</tbody>
</table>

Models

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-4017</td>
<td>115VAC, 7 figure, rear mount, wire leads</td>
</tr>
<tr>
<td>R2-4017</td>
<td>115VAC, 7 figure, behind the panel mount, wire leads</td>
</tr>
<tr>
<td>R9-4017</td>
<td>12VDC, 7 figure, behind the panel mount, wire leads</td>
</tr>
<tr>
<td>SR2-4017</td>
<td>115VAC, 7 figure, snap-in panel mount, wire leads</td>
</tr>
<tr>
<td>T2-4017</td>
<td>115VAC, 7 figure, PCB mount, pins</td>
</tr>
<tr>
<td>V8-4017</td>
<td>24VDC, 7 figure, V-base mount, wire leads</td>
</tr>
</tbody>
</table>
Model 40
Electromechanical Totalizer

Dimensions

Rear Mount

Behind the Panel Mount

Snap-In Panel Mount

V-Base Mount

D-Base Mount

PCB Mount

Applications

Vending/Gaming machines

Photocopiers

Items dispensed

Office equipment

www.redingtoncounters.com
Model 40 Electronic LCD Counter

Description
The Redington Model 40 LCD counter provides a large 7-digit display, 0.18” [4.5mm] in a PCB housing. The LCD counter is 100% interchangeable with the existing IGT electromechanical counter. The counter operates on 24VDC, the same input voltage as the existing IGT counter. The counter is tamperproof and provides the user with a long life high speed counter, up to 130 counts per second (CPS). The existing electromechanical counter is rated at 20 CPS.

Features
- Interchangeable with existing electromechanical counter
- Internal lithium battery (7+ year life)
- Always on display
- 24VDC count input
- PCB mount
- Long life - no mechanical parts to wear out

Specifications
| Display: | Large 7-digit, 0.18”[4.5mm], LCD, black on light background (9999999 Counter) |
| Inputs: | 24 VDC |
| Battery Life: | 7+ years (internal lithium battery) |
| Reset: | Non-reset |
| Case: | Tamperproof, polymer material |
| Operating Temp: | -4°F to 140°F [-20°C to 60°C] |
| Terminations: | PCB 2-pins |
| Weight: | 1oz [28g] |

Models Description
T8E-4017 24VDC, 7 digits, PCB mount, 130 CPS

Dimensions

Applications
- Vending/Gaming machines
- Photocopiers
- Items dispensed
- Office equipment

www.redingtoncounters.com
The Model 40 is a low cost, non-reset totalizer, available with 6-7 figures (white on black background). A wide choice of operating voltages and mountings make this product adaptable for most applications. The Model 40 is an ideal solution for applications that require low cost and product reliability.

**Features**
- Low cost
- Small size
- DC and AC

**Options**
- 6 or 7 figure
- Multiple mounting choices
- Voltages

**Specifications**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figures</td>
<td>6 or 7 figures, white on black, 0.12&quot; (3 mm) high</td>
</tr>
<tr>
<td>Reset</td>
<td>Non-reset</td>
</tr>
<tr>
<td>Speed</td>
<td>600 counts/minute (min. 50ms - on, 50ms - off)</td>
</tr>
<tr>
<td>Voltage</td>
<td>12 or 24 VDC (+ 10/-15% tolerance)</td>
</tr>
<tr>
<td>Power</td>
<td>1.0 watts DC (nominal)</td>
</tr>
<tr>
<td>Mounting</td>
<td>PCB mount</td>
</tr>
<tr>
<td>Terminations</td>
<td>[266.7mm] long or (2) 0.03&quot; [0.8mm] Dia. pins for PCB mounting</td>
</tr>
<tr>
<td>Operating Life</td>
<td>Beyond 10 million counts</td>
</tr>
<tr>
<td>Temp. Range</td>
<td>+23°F to +104°F [-5°C to +40°C]</td>
</tr>
<tr>
<td>Weight</td>
<td>Less than 1 oz. [28g]</td>
</tr>
</tbody>
</table>

**Models**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P8-4016</td>
<td>24VDC, 6 figure, PBC mount, pins</td>
</tr>
<tr>
<td>P8-4017</td>
<td>24VDC, 7 figure, PBC mount, pins</td>
</tr>
<tr>
<td>P9-4016</td>
<td>12VDC, 6 figure, PBC mount, pins</td>
</tr>
<tr>
<td>P9-4017</td>
<td>12VDC, 7 figure, PBC mount, pins</td>
</tr>
</tbody>
</table>

**Dimensions**

**Applications**

- Vending/Gaming machines
- Photocopiers
- Items dispensed
- Office equipment
Model 44

Electromechanical Totalizer

Description
A 6 figure, non-reset counter. Metal/plastic frame assembly assures ruggedness while one piece cover discourages tampering. Precision molded internal gearing requires no lubrication for long, accurate count life. Applications include warranty verification, electronic game counting, coin box tallies, or wherever small size, highly visible numerals, and solid construction are critical.

Features
- Small size
- Highly visible numerals
- Solid construction

Specifications

<table>
<thead>
<tr>
<th>Figures:</th>
<th>6 figures, white on black, 0.18” [4.6mm] high</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset:</td>
<td>None</td>
</tr>
<tr>
<td>Speed:</td>
<td>600 counts/minute</td>
</tr>
<tr>
<td>(min. 50ms - on, 50ms - off)</td>
<td></td>
</tr>
<tr>
<td>Voltages:</td>
<td>115VAC, 24VDC (+/- 10%, but not to exceed 10 volts)</td>
</tr>
<tr>
<td>Power:</td>
<td>1.5 watts (nominal)</td>
</tr>
<tr>
<td>Voltages:</td>
<td>115VAC, 24VDC</td>
</tr>
<tr>
<td>Power:</td>
<td>1.5 watts (nominal)</td>
</tr>
</tbody>
</table>

| Mounting:         | Rear, behind the panel, base, or combination |
| Operating Life:   | Beyond 3 million counts                     |
| Approvals:        | UL Recognized, CE Compliant                 |
| Weight:           | 2.5 oz. [71g]                               |

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
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<tbody>
<tr>
<td>2-4416</td>
<td>115VAC, 6 figure, rear mount</td>
</tr>
<tr>
<td>8-4416</td>
<td>24VDC, 6 figure, rear mount</td>
</tr>
<tr>
<td>R2-4416</td>
<td>115VAC, 6 figure, behind the panel mount</td>
</tr>
<tr>
<td>R8-4416</td>
<td>24VDC, 6 figure, behind the panel mount</td>
</tr>
<tr>
<td>V2-4416</td>
<td>115VAC, 6 figure, base mount</td>
</tr>
<tr>
<td>V8-4416</td>
<td>24VDC, 6 figure, base mount</td>
</tr>
<tr>
<td>RV2-4416</td>
<td>115VAC, 6 figure, combination mount</td>
</tr>
<tr>
<td>RV8-4416</td>
<td>24VDC, 6 figure, combination mount</td>
</tr>
</tbody>
</table>

Dimensions

Rear Mount

Snap-In Panel Mount

Base Mount

Applications
- Warranty verification
- Coin box tallies
- Electronic game counting

www.redingtoncounters.com
Description
A compact, economical, 6 or 7 figure, non-reset, electromechanical counter designed for general purpose industrial and commercial counting applications. It is designed for a variety of mounting methods as required by the application. Commonly used for coin-operating equipment, photocopiers and vending machines.

Features
- 6 or 7 figure
- Compact
- Non-reset
- Variety of mounting options

Specifications
- Figures: 6 or 7 figures, white on black, 0.17” [4.3mm] high
- Reset: None
- Speed: 1,000 counts/minute AC, (min. 30ms - on, 30ms - off)
- Power: AC: 24VAC – 4 watts
- Voltage: 115VAC – 3.5 watts
- Lead lengths: 230VAC – 5 watts
- Operating Life: Beyond 10 million counts
- Mounting: Panel or base
- Terminals: (2) #22 AWG 105°C wire leads, 12” [305mm] long
- Lead lengths: 1,200 counts/minute DC, (min. 25ms - on, 25ms - off)
- Temp. Range: -15°F to +140°F [-26°C to +60°C]
- Approvals: UL Recognized, CSA Certified, CE Compliant
- Speed: AC: 24VDC, (min. 30ms - on, 30ms - off)
- Weight: 1,200 counts/minute DC, (min. 25ms - on, 25ms - off)
- Approvals: D8-4817 24VDC, 7 figures, D base mount
- Approvals: P2-4817 24VDC, 7 figures, P panel mount
- Approvals: P8-4817 24VDC, 7 figures, P panel mount
- Approvals: R2-4816 24VDC, 7 figures, R panel mount
- Approvals: R8-4817 24VDC, 7 figures, R panel mount
- Approvals: SR8-4817 24VDC, 7 figures, SR panel mount
- Approvals: V1-4816 24VDC, 7 figures, V base mount
- Approvals: V2-4817 24VDC, 7 figures, V base mount
- Approvals: V3-4816 24VDC, 7 figures, V base mount
- Approvals: V8-4816 24VDC, 7 figures, V base mount
- Approvals: V9-4816 12VDC, 6 figures, V base mount

* Items in bold are normally in factory stock.

Applications
- Control panels
- Gaming machines
- Vending machines
- Coin-operated equipment
- Photocopiers
Model 48  Electromechanical  Totalizer

Dimensions

**D - Mount**

![Diagram of D Mount]

Mounting holes: 0.15” [3.8] Dia.

**SR - Mount**

![Diagram of SR Mount]

Panel cutout: 1.67” x 1.29” [42.4 x 32.8mm]
Recommended panel thickness: 0.04” to 0.08” [1.0 to 2.0mm]

**P - Mount**

![Diagram of P Mount]

Mounting holes: For #5 flat head screw
Panel cutout: 1.72” x 1.05” [43.7 x 26.7mm]

**R - Mount**

![Diagram of R Mount]

Mounting holes: For #5 flat head screw
Panel cutout: 1.72” x 1.05” [43.7 x 26.7mm]

**V - Mount**

![Diagram of V Mount]

Mounting holes: 0.16” x 0.28” [4.1 x 7.1mm] slots
Model 49

Electromechanical Totalizer

Description
Economically priced 4 and 6 figure push-button reset, electromechanical counter designed for use where limited space is a factor and when reliability is critical. Rugged operating mechanisms require no lubrication or maintenance. Compact size and minimum space requirements make the Model 49 ideally suited for use in control panels, business machines, and test equipment.

Features
- Compact
- No maintenance
- Quick reset

Options
- Voltages
- Extended temperatures
- 4 or 6 figure

Specifications

| Figures:   | 4 or 6 figures, white on black, 0.16” [4mm] high |
| Reset:     | Push-button                                         |
| Speed:     | 600 counts/minute                                  |
| (min. 50ms - on, 50ms - off) |
| Voltages:  | 115VAC, 24VDC                                      |
| (+10% to - 15%) |
| Power:     | AC: 115VAC - 3 watts                               |
| DC: 24VDC - 2 watts |

| Mounting:  | Panel, base, or bail                               |
| Termination: | (2) #22 AWG 105°C wire leads, 10” [254mm] long    |
| Operating Life: | Beyond 100 million counts                        |
| Temp. Range: | -15°F to +140°F [-26°C to +60°C]                  |
| Approvals: | UL Recognized, CE Compliant                       |
| Weight:    | 4 oz. [113g] (4 fig.), 5 oz. [142g] (6 fig.)      |

Models

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<tr>
<th>Models</th>
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<td>B2-4904</td>
<td>115VAC, 4 figure, bail mount</td>
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<tr>
<td>B8-4904</td>
<td>24VDC, 4 figure, bail mount</td>
</tr>
<tr>
<td>D2-4904</td>
<td>115VAC, 4 figure, base mount</td>
</tr>
<tr>
<td>P2-4904</td>
<td>115VAC, 4 figure, panel mount</td>
</tr>
<tr>
<td>P8-4904</td>
<td>24VDC, 4 figure, panel mount</td>
</tr>
<tr>
<td>P9-4904</td>
<td>12VDC, 4 figure, panel mount</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2-4906</td>
<td>115VAC, 6 figure, bail mount</td>
</tr>
<tr>
<td>B8-4906</td>
<td>24VDC, 6 figure, bail mount</td>
</tr>
<tr>
<td>D2-4906</td>
<td>115VAC, 6 figure, base mount</td>
</tr>
<tr>
<td>P2-4906</td>
<td>115VAC, 6 figure, panel mount</td>
</tr>
<tr>
<td>P8-4906</td>
<td>24VDC, 6 figure, panel mount</td>
</tr>
<tr>
<td>P9-4906</td>
<td>12VDC, 6 figure, panel mount</td>
</tr>
</tbody>
</table>

* Items in bold are normally in factory stock.
Model 49  Electromechanical  Totalizer

Dimensions

Panel Mount - 4 Figure

- Panel cutout: 1.46" x 1.01" [37.1 x 25.7mm]
- Mounting holes: For #4 flat head screw

Panel Mount - 6 Figure

- Panel cutout: 2.00" x 1.01" [50.8 x 25.7mm]
- Mounting holes: For #4 flat head screw

Bail Mount - 4 Figure

- Panel cutout: 1.46" x 1.01" [37.1 x 25.7mm]

Bail Mount - 6 Figure

- Panel cutout: 2.00" x 1.01" [50.8 x 25.7mm]

Base Mount - 4 Figure

- Mounting holes: 0.12" x 0.20" [3.1 x 5.1mm] slots

Base Mount - 6 Figure

- Mounting holes: 0.12" x 0.20" [3.1 x 5.1mm] slots

Applications

Test Equipment  Control Panels  Business Machines  Medical devices

www.redingtoncounters.com
Model 710

Electromechanical Hour Meter

Description

The model 710 AC hour meters and minute meters are widely used in panel applications where number size and visibility are critical. Its tough, Lexan bezel and distinctive styling enhance appearance and durability. Available in 5 figure reset or 6 figure non-reset versions.

Features

- Large figures
- Tough, Lexan case
- Reset or non-reset

Options

- Private label faceplates
- Bracket mount
- Mounting bracket (721-0003)
- Splash proof kit (721-0017)
- Heavy duty splash proof kit (721-0018)
- Gasket (17210-004s)

Specifications

Figures: 5 figures, 99999.9 (reset) or 6 figure, 99999.9
(non-reset), 0.19” [5mm] high
Reset: Reset (on front or side) or non-reset
Voltages: 24, 115 or 230VAC, (+/-10%), 50 or 60 Hz.
Power: 3 watts (nominal)
Mounting: Panel (3-hole)
Terminations: 8” [203.2mm] wire leads or terminal block
Temp. Range: -20°F to +160°F [-29°C to +71°C]
Approvals: UL Recognized, CSA Certified, CE Compliant
Weight: 6 oz. [170g]

Models Description

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>710-0001</td>
<td>115VAC/60Hz, non-reset, 99,999.9 hrs, 8” [203mm] wire leads</td>
</tr>
<tr>
<td>710-0002</td>
<td>115VAC/60Hz, non-reset, 99,999.9 hrs, terminal block</td>
</tr>
<tr>
<td>710-0003</td>
<td>230VAC/60Hz, non-reset, 99,999.9 hrs, 8” [203mm] wire leads</td>
</tr>
<tr>
<td>710-0006</td>
<td>24VAC/60Hz, non-reset, 99,999.9 hrs, 8” [203mm] wire leads</td>
</tr>
<tr>
<td>710-0008</td>
<td>115VAC/60Hz, non-reset, 99,999.9 hrs, 8” [203mm] wire leads</td>
</tr>
<tr>
<td>710-0009</td>
<td>115VAC/50Hz, non-reset, 99,999.9 hrs, 8” [203mm] wire leads</td>
</tr>
<tr>
<td>710-0013</td>
<td>115VAC/60Hz, front reset, 99,999.9 hrs, 8” [203mm] wire leads</td>
</tr>
<tr>
<td>710-0014</td>
<td>230VAC/60Hz, non-reset, 99,999.9 hrs, terminal block</td>
</tr>
<tr>
<td>710-0018</td>
<td>115VAC/60Hz, non-reset, 99,999.9 min, 8” [203mm] wire leads</td>
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<tr>
<td>710-0024</td>
<td>24VAC/60Hz, non-reset, 99,999.9 hrs, terminal block</td>
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<tr>
<td>710-0026</td>
<td>115VAC/50Hz, non-reset, 99,999.9 hrs, terminal block</td>
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<td>710-0032</td>
<td>115VAC/60Hz, front reset, 99,999.9 hrs, terminal block</td>
</tr>
<tr>
<td>710-0051</td>
<td>115VAC/60Hz, non-reset, 99,999 hrs, terminal block</td>
</tr>
</tbody>
</table>

* Items in bold are normally in factory stock.

Dimensions

8” [203mm] Wire Leads

![Diagram of 8" [203mm] Wire Leads]

Mounting holes: For #4 screws on 2.44” [62.0] B.C. and #6 screws on 2.53” [64.3] B.C. 
Panel cutout: 2.21” [56.1] Dia.

Applications

Office equipment
Control panels
Industrial equipment
Test equipment
Compressors

www.redingtoncounters.com
Description
The Redington Model 711/731 provides a family of compact 7 figure, AC or DC Hour Meters. Models are available in the standard industry housings, 2-Hole rectangular, flush-round and flush-rectangular. DC Models are quartz controlled for high reliability and accuracy. A choice of two rectangular panel cutouts are offered 1.45" X 0.95" [36.8mm X 24.1mm] or 1.45" X 0.87" [36.8mm X 2.1mm]. The Round meter has a panel cutout of 1.99" [50.5mm].

Features

- 7 figure, 99999.99
- Various voltage inputs
- Quartz accuracy (DC)
- Large figures, 0.14" [3.6mm]
- CE Compliant
- UL Recognized/CSA Certified for AC
- UL/cUL Recognized for DC

Specifications

<table>
<thead>
<tr>
<th>Figures:</th>
<th>7 figures, 0.14&quot; [3.6mm] 99999.99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset:</td>
<td>Non-reset</td>
</tr>
<tr>
<td>Voltages:</td>
<td>24, 115 or 230VAC (± 10%), 50 or 60 Hz 10-28VDC</td>
</tr>
<tr>
<td>Power:</td>
<td>2 watts AC, 0.4 watts DC</td>
</tr>
<tr>
<td>Mounting:</td>
<td>Clip or mounting holes</td>
</tr>
<tr>
<td>Termination:</td>
<td>1/4&quot; [6.3mm] spade terminals with screws (AC) 1/4&quot; [6.3mm] spade terminals (DC)</td>
</tr>
<tr>
<td>Accuracy:</td>
<td>0.01% (DC) quartz</td>
</tr>
<tr>
<td>Case Material:</td>
<td>Black polymer</td>
</tr>
<tr>
<td>Weight:</td>
<td>1.2oz. [35g]</td>
</tr>
</tbody>
</table>

Environmental:
- Front Panel: IP65
- Operating Temperature: -22°F to +180°F [-30°C to +82°C]
- Storage Temperature: -40°F to +185°F [-40°C to +85°C]
- Vibration: 1g [10/500Hz] IEC 68-2T-34
- Shock: 30g [18ms] IEC 68-2T-27 25g [16ms] IEC 68-2T-19
- Agency Approvals: CE Compliant UL Recognized/CSA Certified for AC UL/cUL Recognized for DC

Models

<table>
<thead>
<tr>
<th>Models</th>
<th>Voltage AC</th>
<th>Mount</th>
<th>Panel Cut-out</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.45 X .87</td>
</tr>
<tr>
<td>711-0013</td>
<td>115VAC/60Hz</td>
<td>Round</td>
<td>X</td>
</tr>
<tr>
<td>711-0014</td>
<td>230VAC/60Hz</td>
<td>Round</td>
<td>X</td>
</tr>
<tr>
<td>711-0113</td>
<td>115VAC/60Hz</td>
<td>Flush Rect</td>
<td>X</td>
</tr>
<tr>
<td>711-0114</td>
<td>24VAC/60Hz</td>
<td>Flush Rect</td>
<td>X</td>
</tr>
<tr>
<td>711-0120</td>
<td>115VAC/60Hz</td>
<td>Flush Rect</td>
<td>X</td>
</tr>
<tr>
<td>711-0123</td>
<td>230VAC/60Hz</td>
<td>Flush Rect</td>
<td>X</td>
</tr>
<tr>
<td>711-0130</td>
<td>115VAC/60Hz</td>
<td>2-Hole</td>
<td>X</td>
</tr>
<tr>
<td>711-0131</td>
<td>230VAC/60Hz</td>
<td>2-Hole</td>
<td>X</td>
</tr>
<tr>
<td>711-0132</td>
<td>24VAC/60Hz</td>
<td>2-Hole</td>
<td>X</td>
</tr>
<tr>
<td>711-0133</td>
<td>115VAC/50Hz</td>
<td>2-Hole</td>
<td>X</td>
</tr>
<tr>
<td>711-0138</td>
<td>230VAC/60Hz</td>
<td>Flush Rect.</td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Models</th>
<th>Voltage DC</th>
<th>Mount</th>
<th>Panel Cut-out</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.45 X .87</td>
</tr>
<tr>
<td>731-0006</td>
<td>10-28VDC</td>
<td>Round</td>
<td>X</td>
</tr>
<tr>
<td>731-0040</td>
<td>10-28VDC</td>
<td>2-Hole</td>
<td>X</td>
</tr>
<tr>
<td>731-0041</td>
<td>10-28VDC</td>
<td>Flush Rect</td>
<td>X</td>
</tr>
<tr>
<td>731-0042</td>
<td>10-28VDC</td>
<td>Flush Rect</td>
<td>X</td>
</tr>
<tr>
<td>731-0051</td>
<td>10-28VDC</td>
<td>2-Hole</td>
<td>X</td>
</tr>
</tbody>
</table>

* Items in bold are normally in factory stock.
Model 711/731
Electromechanical Hour Meter

Dimensions

PANEL OPENING 1.45 [36.8] X 0.87 [22.1]
PANELTHICKNESS 0.50” [12.7]

PANEL OPENING 1.45 [36.8] X 0.87 [22.1]
PANELTHICKNESS 0.50” [12.7]

PANEL OPENING 1.45 [36.8] X 0.95 [24.1]
PANELTHICKNESS 0.50” [12.7]

Applications

Medical equipment

Test equipment

Office equipment

www.redingtoncounters.com
Model 711/731
Electromechanical Hour Meter

Description

These 7 figure, AC or DC hour meters with running indicators, offer crisp, distinctive styling for many panel applications. Available in square and round bezel, flush mount, or three-hole round panel mount. Each is light-weight, low power, and carry UL, CSA and CE approvals.

Features

- 7 figure, 99999.99
- Various voltage inputs
- Distinctive styling

Specifications

| Figures: | 7 figures, 0.14” high [3.6mm], 99,999.99 hours |
| Reset: | Non-reset |
| Voltages: | 24, 115, or 230VAC (+/-10%), 50 or 60Hz., 10-80VDC |
| Power: | 3 watts (AC), 1.2 watt maximum (DC) |
| Terminations: | 1/4” [6.3mm] spade terminals, with removable screws, or 8” [203mm] wire leads |

Options

- Terminations
- Din rail
- Voltages

Models

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>711-0150</td>
<td>115VAC/60Hz, 2.28” Dia., Flush mount, screw termination</td>
</tr>
<tr>
<td>711-0152</td>
<td>230VAC/60Hz, 2.28” Dia., Flush mount, screw termination</td>
</tr>
<tr>
<td>711-0160</td>
<td>115VAC/60Hz, 2.93” Dia., 3-hole round, screw termination</td>
</tr>
<tr>
<td>711-0162</td>
<td>230VAC/60Hz, 2.93” Dia., 3-hole round, screw termination</td>
</tr>
<tr>
<td>711-0163</td>
<td>230VAC/50Hz, 2.93” Dia., 3-hole round, screw termination</td>
</tr>
<tr>
<td>711-0164</td>
<td>24VAC/60Hz, 2.93” Dia., 3-hole round, screw termination</td>
</tr>
<tr>
<td>711-0171</td>
<td>115VAC/60Hz, 2.93” Dia., 3-hole round, 8” wire leads</td>
</tr>
<tr>
<td>711-0180</td>
<td>115VAC/60Hz, 1.89” Sq., Flush mount, screw termination</td>
</tr>
<tr>
<td>711-0182</td>
<td>24VAC/60Hz, 1.89” Sq., Flush mount, screw termination</td>
</tr>
<tr>
<td>711-0190</td>
<td>115VAC/60Hz, 2.05” Sq., Flush mount, screw termination</td>
</tr>
<tr>
<td>711-0192</td>
<td>24VAC/60Hz, 2.05” Sq., Flush mount, screw termination</td>
</tr>
<tr>
<td>711-0193</td>
<td>115VAC/50Hz, 2.05” Sq., Flush mount, screw termination</td>
</tr>
<tr>
<td>711-0195</td>
<td>24VAC/50Hz, 2.05” Sq., Flush mount, screw termination</td>
</tr>
<tr>
<td>731-0046</td>
<td>10-80VDC, 2.93” Dia., 3-hole round, screw termination</td>
</tr>
</tbody>
</table>

* Items in bold are normally in factory stock.

Dimensions

<table>
<thead>
<tr>
<th>2.28” Dia. Flush</th>
<th>3 - Hole Round</th>
<th>1.89” or 2.05” Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screws provided: 4-40 x 5/8” [16] Bolt hole circle: 2.44’’ [62]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Applications

- Medical equipment
- Test equipment
- Office equipment

www.redingtoncounters.com 87
# Model 711

## Electromechanical

## Hour Meter

### Description

A rectangular style AC hour meter designed to complement existing meters in control panels. Available in 6 figure reset or 7 figure non-reset. The non-reset model incorporates a retaining clip to lock into panel, while the reset version has a metal bracket and screw.

### Features

- Large figures
- 6 or 7 digits
- UL Recognized, CSA Certified, CE Compliant

### Options

- Reset or non-reset

### Specifications

<table>
<thead>
<tr>
<th>Features</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figures: 6 figure (reset) or 7 figure (non-reset), 0.19” [5mm] high 9,999.99 hours. (reset version) 99,999.99 hours. (non-reset models)</td>
<td>Mounting: Panel (mounting hardware included)</td>
</tr>
<tr>
<td>Reset: Push-button, or non-reset</td>
<td>Termination: 19” [483mm] wire leads</td>
</tr>
<tr>
<td>Voltages: 115VAC (+/- 10%), 50 or 60 Hz.</td>
<td>Temp. Range: -4°F to +158°F [-20°C to +70°C]</td>
</tr>
<tr>
<td>Power: 2 watts (nominal)</td>
<td>Approvals: UL Recognized, CSA Certified, CE Compliant</td>
</tr>
<tr>
<td>Options: Voltages</td>
<td>Weight: 2 oz. [57g]</td>
</tr>
</tbody>
</table>

### Models

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>711-0019</td>
<td>115VAC/60Hz, reset, 6 figure, 9,999.99 hrs., 19” [483mm] wire leads</td>
</tr>
<tr>
<td>711-0020</td>
<td>115VAC/60Hz, non-reset, 7 figure, 99,999.99 hrs., 19” [483mm] wire leads</td>
</tr>
<tr>
<td>711-0041</td>
<td>115VAC/50Hz, non-reset, 7 figure, 99,999.99 hrs., 19” [483mm] wire leads</td>
</tr>
</tbody>
</table>

### Dimensions

#### Non-Reset

- Panel cutout: 1.98” x 0.99” [50.3 x 25.1]

#### Reset

- Panel cutout: 1.98” x 0.99” [50.3 x 25.1]

### Applications

- Medical equipment
- Test equipment
- Office equipment
Description

A 5 figure (reset) or 6 figure (non-reset), AC hour meter encased in a rugged steel housing. The non-reset models are completely sealed. Reset models are available, as are both wire lead and terminal block versions.

Features

- Rugged steel housing

Options

- Chrome bezel
- Readouts to 9999.99 hrs.
- Voltages
- Gasket (721-0004)

Specifications

**Figures:** 5 figure (reset) or 6 figure (non-reset), 0.19" [5mm] high, 9,999.9 (reset) or 99,999.9 (non-reset)

**Reset:** Reset or non-reset

**Voltages:** 24, 115, and 230VAC (+/- 10%), 50 or 60Hz.

**Power:** 3 watts max.

**Mounting:** Panel (3-hole or metal clamp)

**Termination:** Terminal block or 6” [152mm] wire leads

**Temp. Range:** -40°F to +160°F [-40°C to +70°C]

**Approvals:** UL Recognized, CSA Certified, CE Compliant

**Weight:** 10 oz. [284g]

**Models**

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>720-0001</td>
<td>24VAC/60Hz, non-reset, 3-hole round, 6” [152.4mm] wire leads</td>
<td>720-0012</td>
<td>115VAC/60Hz, front reset, 3-hole round, 6” [152.4mm] wire leads</td>
</tr>
<tr>
<td>720-0004</td>
<td>115VAC/60Hz, non-reset, 3-hole round, terminal block</td>
<td>720-0030</td>
<td>115VAC/50Hz, non-reset, 3-hole round, 6” [152.4mm] wire leads</td>
</tr>
<tr>
<td>720-0007</td>
<td>115VAC/60Hz, non-reset, 3-hole round, 6” [152.4mm] wire leads</td>
<td>720-0031</td>
<td>230VAC/60Hz, non-reset, 3-hole round, terminal block</td>
</tr>
<tr>
<td>720-0008</td>
<td>115VAC/60Hz, non-reset, metal clamp, terminal block</td>
<td>720-0036</td>
<td>230VAC/60Hz, non-reset, 3-hole round, 6” [152.4mm] wire leads</td>
</tr>
<tr>
<td>720-0011</td>
<td>115VAC/60Hz, non-reset, metal clamp, 6” [152.4mm] wire leads</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Items in bold are normally in factory stock.

Dimensions

**Non-Reset / Terminal Block**

Panel cutout: 2.16” [54.9] Dia.
Mounting holes: 0.125” [3.2] Dia. on 2.44” [62.0] B.C.

Applications

- Control panels
- Industrial equipment
- Test equipment

www.redingtoncounters.com
## Model 722/732
### Electromechanical
### Totally Sealed Hour Meter

![Image of models](https://www.redingtoncounters.com/assets/images/models.png)

**Description**
The Redington Model 722 provides an AC Hour Meter with an operating range of 90-264VAC 50/60 Hz. You no longer require two separate meters, one for 115VAC and one for 230VAC. The Redington Model 732 provides a DC Hour Meter with an operating range of 10-80VDC. 732 Models are protected for 2x battery voltage and/or reverse polarity. A quartz time base insures accurate long-term time keeping while the sealed case protects against the environment and provides years of reliable service. Models have a square front panel dimension of 1.90" [48mm x 48mm]. Three adapter panels are also available for fitting additional panel dimensions.

### Features
- 722 Operating voltage 90-264VAC 50/60Hz
- 732 Operating voltage 10-80VDC
- Totally Sealed
- UL/cUL Recognized, CE & RoHS Compliant
- 6 Figure, 99999.9

### Options
- Wire leads
- Terminals up, down, straight
- Available adapter panels

### Specifications

| Figures: | 6 - digits, 0.14" [3.6mm] 99999.9
| Hours and indicator - white on black
| Decimal - black on white |
| Reset: | Non-reset |
| 722 Voltage: | 90-264VAC 50/60Hz |
| 732 Voltage: | 10-80VDC 50/60Hz |
| Power: | 1 watt max. |
| Mounting: | Clip (with optional adapter panels) |
| Termination: | ¼" [6.3mm] spade terminals |
| Weight: | ~2 oz [57 g] |
| Accuracy: | ± 0.02% over entire range |

| Case Material: | Black polymer |
| Lens Material: | Polymer |
| Agency Approvals: | UL/cUL Recognized, CE, RoHS, SAE J1378 |
| 732 Overvoltage & Reverse Polarity: | Protected for 2x battery voltage/reverse polarity |
| Environmental: | Totally Sealed |
| Temperature: | -40°F to +185°F [-40°C to + 85°C] |
| Humidity: | 95% (SAE J1378) |
| Vibration: | 10-80 Hz. 20g max. (SAE J1378) |
| Shock: | 55g @ 9 - 13msec (SAE J1378) |

### Models & Description
- **722-0030/732-0030**, 1.89" [48mm] Square Panel
- **722-0030**, Square Panel mount with Clip, 90-264VAC 50/60Hz, ¼" [6.3mm] spade terminals, hours & 1/10’s
- **732-0030**, Square Panel mount with Clip, 10-80VDC, ¼" [6.3mm] spade terminals, hours & 1/10’s
- **1662-026**, Square Panel, 2.2" [55mm]
- **1662-024**, Square Panel, 2.84" [72mm]
- **1662-025**, Round Panel, 2.84" [72mm]

* All items are normally in factory stock

www.redingtoncounters.com
Model 722/322
Electromechanical
Totally Sealed Hour Meter

Model 722 Applications
- Medical Equipment
- Control Panels
- Test Equipment
- Generators
- Office Equipment

Model 732 Applications
- Material Handling
- Farm Equipment
- Outdoor Power Equipment
- Construction Equipment
- Utility Vehicles

Dimensions
- Square Panel, 2.2" [55mm]
- Square Panel, 2.84" [72mm]
- Round Panel, 2.84" [72mm]
Model 722
Electromechanical
Totally Sealed Hour Meter

Description
The Redington Model 722 provides an AC Hour Meter with an operating range of 90-264VAC 50/60 Hz. You no longer require two separate meters, one for 115VAC and one for 230VAC. Models are available in the standard industry housings, 2-Hole Rectangular, Flush-Rectangular, Flush-Round and 3-Hole Round. Its quartz time base insures accurate long-term time keeping. The Totally Sealed case protects against the environment and provides years of reliable service. All models are NEMA 4X,12 rated when mounted with optional gasket.

Features
- Operating voltage 90-264VAC 50/60Hz
- Totally Sealed
- UL/cUL Recognized, CE & RoHS Compliant
- 6 Figure, 99999.9
- Quartz accuracy

Options
- Wire leads
- Gasket kit (for NEMA 4X, 12 rating)
- Custom lens
- Terminals up, down, straight

Specifications

Figures:
- 6 - digits, 0.14" [3.6mm] 99999.9
- Hours and indicator - white on black
- Decimal - black on white

Reset:
- Non-reset

Voltage:
- 90-264VAC

Frequency:
- 50/60Hz

Power:
- 1 watt max.

Mounting:
- Clip or mounting holes

Termination:
- ¼" [6.3mm] spade terminals

Weight:
- ~2 oz [57 g]

Accuracy:
- ± 0.02% over entire range

Case Material:
- Black polymer

Lens Material:
- Polymer

Agency Approvals:
- UL/cUL Recognized, CE & RoHS Compliant
- SAE & NEMA 4X, 12 Compliant

Environmental:
- Totally Sealed

Front Panel:
- NEMA 4X, 12 rated with optional gasket

Temperature:
- -40°F to +185°F [-40°C to + 85°C]

Humidity:
- 95% (SAE J1378)

Vibration:
- 10-80 Hz. 20g max. (SAE J1378)

Shock:
- 55g @ 9 - 13msec (SAE J1378)

Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>722-0001</td>
<td>2-Hole Rectangular, 90-264VAC 50/60Hz, ¼&quot; [6.3mm] spade terminals, hours &amp; 1/10's</td>
</tr>
<tr>
<td>722-0002</td>
<td>Flush-Rectangular, 90-264VAC 50/60Hz, ¼&quot; [6.3mm] spade terminals, hours &amp; 1/10's</td>
</tr>
<tr>
<td>722-0003</td>
<td>Flush-Round, 90-264VAC 50/60Hz, ¼&quot; [6.3mm] spade terminals, hours &amp; 1/10's</td>
</tr>
<tr>
<td>722-0004</td>
<td>3-Hole Round, 90-264VAC 50/60Hz, ¼&quot; [6.3mm] spade terminals, hours &amp; 1/10's</td>
</tr>
<tr>
<td>5003-009</td>
<td>NEMA 4X, 12 Gasket for Model 722-0002</td>
</tr>
<tr>
<td>5003-010</td>
<td>NEMA 4X, 12 Gasket for Model 722-0001</td>
</tr>
<tr>
<td>5003-011</td>
<td>NEMA 4X, 12 Gasket for Model 722-0004</td>
</tr>
<tr>
<td>5003-012</td>
<td>NEMA 4X, 12 Gasket for Model 722-0003</td>
</tr>
</tbody>
</table>

* All items are normally in factory stock

www.redingtoncounters.com
**Model 722**

**Electromechanical Totally Sealed Hour Meter**

**Dimensions**

**2-Hole**

- Dimensions:
  - 2.05 [52.1]
  - 1.47 [37.4]
  - 1.03 [26.2]
  - 1.75 [44.5]
  - 1.15 [3.8]

**Flush-Rectangular**

- Dimensions:
  - 1.60 [40.6]
  - 0.93 [23.5]
  - 1.43 [36.3]

**Flush-Round**

- Dimensions:
  - 2.17 [55.1]
  - 1.87 [47.5]
  - Ø1.98 [Ø50.3]
  - Ø2.24 [Ø56.9]
  - Ø1.95 [Ø49.4]
  - Ø1.82 [Ø46.2]

**3-Hole Round**

- Dimensions:
  - Ø2.80 [Ø71.1]
  - Ø2.53 [Ø64.3]
  - Ø2.42 [Ø61.5]
  - Ø2.10 [Ø53.3]
  - Ø1.98 [Ø50.3]

Panel Opening: 1.45" X 0.95" [36.8 X 24.1]
Panel Thickness: 0.03 to 0.63 [0.76 to 16.00]

**Applications**

- Medical Equipment
- Control Panels
- Test Equipment
- Generators
- Office Equipment
Model 731

Electromechanical
Totally Sealed Hour Meter

Description

The Redington Model 731 has quartz controlled timing assuring accurate time indication. This Hour Meter features a sealed case, stirrup mounting and a wide operating voltage range. The Hour Meter is protected against short circuit, reverse polarity and has an operation indicator.

Features

- SAE case
- Totally sealed
- Quartz accuracy
- 7 figures, 99999.99
- Operating voltage 10-80VDC
- Stirrup mount

Options

- Vibration dampening ring
- Special voltages; 2-20VDC and 80-220VDC

Specifications

Figures:
- 7-digits, 0.138” [3.5] 99999.99
- Hours-white on black
- Decimals-black on white

Operation indication: Yes
Reset: Non-reset
Voltage: 10-80VDC
Mounting: Stirrup
Power: 1.4 to 15mA
Termination: ¼” [6.3mm] quick connect

Weight: 3.5 oz [100g]
Accuracy: ± 0.01 over entire range
Case material: Black polymer
Agency approvals: CE compliant
Environmental: Totally sealed (all models)
Front panel: IP 65 - front
Rear terminals: IP 00 - rear
Temperature: -40°F to +176°F [-40˚C to 80˚C]
Vibration: +/- 0.5mm amplitude @ 45Hz

Models

731-0002
- Flush Round, 10-80VDC, ¼” [6.3mm] quick connect, 99999.99h, chrome bezel

731-0004
- Flush-Round, 10-80VDC, ¼” [6.3mm] quick connect, 99999.99h, black plastic bezel

* All items are normally in factory stock.

Dimensions

Applications

Medical Equipment
Outdoor power equipment
Utility Vehicles
## Description

The Redington Model 732 provides a DC Hour Meter with an operating range of 10-80VDC. Models are protected for 2 times battery voltage and/or reverse polarity. Models are available in the standard industry housings, 3-Hole Round, Flush-Rectangular, Flush-Round and 2-Hole Rectangular. A Stirrup and Cup mount are available for applications where high shock and vibration exist. Its quartz time base insures accurate long-term time keeping. The Totally Sealed case protects against the environment and provides years of reliable service. Most models are NEMA 4X, 12 rated when mounted with optional gasket.

## Features
- Operating voltage 10-80VDC
- Totally Sealed
- UL/cUL Recognized, CE & RoHS Compliant
- 6 Figure, 99999.9
- Quartz accuracy
- 6 mounting variations

## Options
- Wire leads
- Gasket kit (for NEMA 4X, 12 rating)
- Custom Lens
- Terminals up, down, straight
Specifications

Figures: 6 - digits, 0.14" [3.6mm] 99999.9
Hours and running indicator - white on black
Decimal - black on white
Reset: Non-reset
Voltage: 10-80VDC
Power: 1 watt max.
Mounting: Clip, mounting holes, Cup, or Stirrup
Termination: ¼" [6.3mm] spade terminals
Weight: ~2.0 oz [57 g]
Accuracy: ± 0.02% over entire range
Bezel: Stirrup and Cup mount have metallic bezels
Case Material: Black polymer
Lens Material: Cup & Stirrup - glass
All other models - polymer

Transient Protection: ± 6 times normal for 300msec
Agency Approvals: UL/cUL Recognized, CE, SAE, & RoHS Compliant. All models are NEMA 4X, 12 Compliant except the Cup and Stirrup mount
Overvoltage & Reverse Polarity: Protected for 2 times battery voltage and/or reverse polarity
Environmental: Totally Sealed
Front Panel: NEMA 4X, 12 rated with optional gasket
Temperature: -40°F to +185°F [-40°C to +85°C]
Humidity: 95% (SAE J1378)
Shock: 55g @ 9 - 13msec (SAE J1378)
Vibration: 10-80Hz. 20g max. (SAE J1378)

Panel Opening: 1.45" X 0.95" [36.8 X 24.1]
Maximum Panel Thickness: 0.03 to 0.63 [0.76 to 16.00]
Model 732
Electromechanical
Totally Sealed Hour Meter

**Flush-Round**

Panel Opening: 2.0” [50.6]
Maximum Panel Thickness: 0.40 [10.2]

**3-Hole Round**

Panel Opening: 2.0” [50.6]

Applications

- Material Handling
- Farm Equipment
- Outdoor Power Equipment
- Construction Equipment
- Utility Vehicles

NOTE: SUPPLIED WITH MOUNTING HARDWARE
Linear Measuring Wheels
These medium-duty linear measuring wheels are used for estimating distances on smooth surfaces indoors and out. They feature a 5-figure display with bold .20" high numerals, and are capable of counting to 10000 feet or 1000 meters, depending on the model chosen. Their lightweight design eases handling, and the reset button is protected by a raised collar. The bright orange color increases visibility. Single and dual wheel models are available, as are multi-position straight or curved handles. Component parts are sold separately for quick field repairs. These wheels are widely used by contractors, utilities, accident investigators, real estate agents, and landscapers.

### Features
- These medium-duty linear measuring wheels are used for estimating distances on smooth surfaces indoors and out.
- They feature a 5-figure display with bold .20" high numerals.
- They are capable of counting to 10000 feet or 1000 meters, depending on the model chosen.
- Their lightweight design eases handling.
- The reset button is protected by a raised collar.
- The bright orange color increases visibility.
- Single and dual wheel models are available.
- Multi-position straight or curved handles are available.
- Component parts are sold separately for quick field repairs.
- These wheels are widely used by contractors, utilities, accident investigators, real estate agents, and landscapers.

### Specifications

#### Single Wheel

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-0735</td>
<td>1 ft., 9999 ft.11 in., straight handle</td>
</tr>
<tr>
<td>13-0735</td>
<td>1 ft., 9999 ft.11 in., curved handle</td>
</tr>
<tr>
<td>15-0735</td>
<td>1 ft., 9999.9 ft., straight handle</td>
</tr>
<tr>
<td>17-0735</td>
<td>1 ft., 9999.9 ft., curved handle</td>
</tr>
<tr>
<td>11-0725</td>
<td>30 cm., 999.99 m, straight handle</td>
</tr>
<tr>
<td>13-0725</td>
<td>30 cm., 999.99 m, curved handle</td>
</tr>
</tbody>
</table>

#### Dual Wheel

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-0735</td>
<td>1 ft., 9999 ft.11 in., straight handle</td>
</tr>
<tr>
<td>14-0735</td>
<td>1 ft., 9999 ft.11 in., curved handle</td>
</tr>
<tr>
<td>16-0735</td>
<td>1 ft., 9999.9 ft., straight handle</td>
</tr>
<tr>
<td>18-0735</td>
<td>1 ft., 9999.9 ft., curved handle</td>
</tr>
<tr>
<td>12-0725</td>
<td>30 cm., 999.99 m, straight handle</td>
</tr>
<tr>
<td>14-0725</td>
<td>30 cm., 999.99 m, curved handle</td>
</tr>
</tbody>
</table>
These heavy-duty measuring wheels are best suited for outdoor use, recording long distances over a variety of surfaces, including rough terrain. Their lightweight design eases handling, and the reset button is protected by a raised collar. These models are available with multi-position straight or curved handles. Component parts are sold separately for quick field repairs. The bright orange wheel enhances visibility, and the fold down handle reduces storage space. These models are widely used for estimating by contractors, accident investigators, landscapers, surveyors, real estate agents, and farmers.

Features
These sturdy multi-purpose measuring wheels are best suited for quick and easy measuring over a variety of surfaces. They feature a 5-figure display with bold .20” high numerals and are capable of counting to 10,000 feet or meters, depending on the model chosen. Their lightweight design eases handling, and the reset button is protected by a raised collar. These models are available with multi-position straight or curved handles. Component parts are sold separately for quick field repairs. These units are widely used for estimating by contractors, accident investigators, landscapers, surveyors, real estate agents, and farmers.

Specifications

| Figures | 5 figures, .19” high |
| Reset | Push-button |
| Warranty | Lifetime |
| Weight | 1.9 lbs. |
| Extended Size | 48” (curved handle), 43” (straight handle) |
| Storage Size | 32” (curved handle), 21” (straight handle) |
| Wheel Size | Wheels are identified by their circumference. 3 ft. wheel has a diameter of ~11.5 in. 1 m. wheel has a diameter of ~32 cm. |
| Models | Description |
| 11-0765 | 3 ft., 9999 ft.11 in., curved handle |
| 12-0765 | 3 ft., 9999 ft.11 in., straight handle |
| 13-0765 | 3 ft., 9999.9 ft., curved handle |
| 14-0765 | 3 ft., 9999.9 ft., straight handle |
| 11-0755 | 1 m., 9999.9 m., curved handle |
| 12-0755 | 1 m., 9999.9 m., straight handle |
| 200700-065s | Metal Stand & Hardware Kit (for 0755 & 0765) |

These heavy-duty measuring wheels are best suited for outdoor use, recording long distances over a variety of surfaces, including rough terrain. Their lightweight design eases handling and reduces fatigue. They are capable of counting to 100,000 feet or meters depending on the model chosen. These “In-line” models are available with 3 ft., 4 ft., and 1 meter circumference wheels. Component parts are sold separately for quick field repairs. The bright orange wheel enhances visibility, and the fold down handle reduces storage space. These models are widely used for estimating by contractors, agriculturalists, surveyors and landscapers.
**Get Started Package**

Our “Getting Started Package” is an easy way to get set up as an authorized re-seller of our Measuring Wheels. The package comes with a variety of Measuring Wheels (tailored to meet your specific requirements), a display rack, and product literature. Call your sales representative for more information

- Features 5 of the Most Popular Redi-Measure Wheels
- Free Display and Literature
- Lifetime Warranty
- Free Freight

Call your sales representative for more details on getting set up as a Measuring Wheel Distributor.

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**Carrying Cases**

Protect your measuring wheel with a handy carrying case. Carrying Cases are available for all models of the Redi-Measure measuring wheels. Durable black measuring wheel carrying cases with shoulder strap.

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886-003s</td>
<td>For 3 ft or 1 meter with curved handle</td>
</tr>
<tr>
<td>1886-004s</td>
<td>For 3 ft or 1 meter with straight handle and 3 ft or 1 meter inline without stand</td>
</tr>
<tr>
<td>1886-005s</td>
<td>For 4 ft curved handle with stand and, 3 ft or 1 meter inline with stand</td>
</tr>
</tbody>
</table>

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**Hand Tallys**

A 4 figure, hand-held, desk mounted, or electronic reset counter with push-button actuator. Electronic Model E6 is completely sealed and suitable for outdoor use. These Tallys are a convenient way to count inventory, attendance, or traffic.

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-1804</td>
<td>Mechanical Hand Tally</td>
</tr>
<tr>
<td>13-1804</td>
<td>Mechanical Desk Tally</td>
</tr>
<tr>
<td>E6-1804</td>
<td>Electronic Ring Tally</td>
</tr>
</tbody>
</table>

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**Spare Parts**

All of the component parts for our Measuring Wheels are sold separately to replace damaged parts or to keep on hand for quick field repairs. Contact your sales representative for the correct part number for the part you are looking for.

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**LIFETIME WARRANTY**

REDINGTON COUNTERS, INC. WARRANTS THAT ITS REDI-MEASURE WHEELS WILL BE FREE FROM DEFECTS RELATED TO MATERIALS AND/OR WORKMANSHIP FOR THE LIFE OF THE PRODUCT.

WITHIN THIS WARRANTY PERIOD, REDINGTON COUNTERS, INC. WILL REPAIR OR REPLACE SUCH PRODUCTS RETURNED TO REDINGTON COUNTERS, INC., FREIGHT PREPAID, THAT ARE DETERMINED BY REDINGTON COUNTERS, INC. TO BE DEFECTIVE. NO PRODUCTS SHALL BE RETURNED TO REDINGTON COUNTERS, INC. WITHOUT REDINGTON COUNTERS, INC. PRIOR CONSENT.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND SHALL NOT APPLY TO ANY PRODUCT WHICH HAS BEEN SUBJECT TO ALTERATION, MISUSE, ABUSE, NEGLIGENCE, OR ACCIDENT; IN NO EVENT SHALL REDINGTON COUNTERS, INC. BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES.
Model 93

Electronic Hand Held Tachometer

Description
The Redington Model 9300-HTK hand tachometer kit utilizes state of the art technology at an affordable cost. Simple to use… push the measurement button to record the speed. The tachometer can be used for contact or non-contact measurement on rotating machinery or surface speed. The 9300-HTK can indicate RPM or rotational speed, length measurement, meters, yards, or feet per minute. The photoelectric probe is used with reflective tape to detect rotating objects. The accessory adaptor with pointed tip can be added for contact measurement or wheels can be used for surface speed measurement.

Features
- Combination unit - photo and contact
- Laser sighting operating range up to 40.0” [1000mm]
- Auto ranging - fixed decimal
- Tripod mounting bushing
- Low battery indicator
- Max / min / avg
- 40 points of memory
- Carrying case included
- 9V battery
- Instruction manual
- Certificate of calibration
- Cone adapter
- Funnel adapter
- Contact adapter
- Master wheel 3.94” [100mm]
- Reflective tape 0.59” x 20.67” [15mm x 525mm]

Specifications
- Rotation speed (non-contact): 6.0 to 99999 RPM (rev/min)
- Rotation speed (contact): 6.0 to 25000 (rev/min)
- Surface speed (contact): 0.6 to 2500.0 M/M (m/min)
  0.7 to 2734.0 Y/M (yard/min)
  23.6 to 98425 I/M (inch/min)
  2.0 to 8202.1 F/M (feet/min)
- Length (contact):
  0.1 to 9999.9 m (meter)
  0.1 to 10936 YD (yard)
  0.3 32808 FT (feet)
- Accuracy: 6.0 to 5999.9 RPM: ± 0.01% and ± 1 digit
  5999.9 to 99999 RPM: ± 0.05% & ± 1 digit
- Surface speed, length 0.5% and ± 1 digit
- Detection: Laser diode

Resolution: 6.0 to 9999.9 RPM : 0.1 RPM
10000 to 99999 RPM : 1 RPM
Response time: 1 second
Operating temperature: 32°F to +122°F [-20°C to +50°C]
Auto power off: Automatically after approx. 30 second
Battery type: 9V (006P, IEC6F22, NEDA1604)
Dimensions: 5.79” H x 1.93” W x 1.14” D [147mm x 49mm x 29mm]
Weight: 3.4oz [95g] (without battery)
Contact adaptor: 1.8oz [50g]
Total number of revolutions: 1 to 99999 REV (rev)
Measuring distance: 40” [100 cm]
Warranty: 1 year
Agency approvals: RoHS, CE Compliant

Models
9300-HTK Hand Tachometer Kit: includes Hand Tachometer, 9V battery, instruction manual, certificate of calibration, cone adapter, funnel adapter, contact adapter, master wheel, reflective tape, and carrying case

Applications
- Conveyor line speed
- Speed of rotating objects
- Check motor speeds

* Item in bold is normally in factory stock.
Model 99
Infrared
Non-Contact Thermometer

Description
The Redington Model 99 line of non-contact thermometers use the latest infrared measuring technologies housed in rugged and ergonomic designs. These high performance measuring instruments feature laser sighting, backlight LCD displays, and are available with some of the highest distance to spot ratios in the industry. With ultra low power consumption and available data storage, the Model 99 line provides extended measuring reliability for a variety of applications.

Features
- Rugged and ergonomic design
- Ultra low power consumption mode
- Backlit LCD display
- °C or °F selectable
- Laser sighting ON/OFF
- 9V battery included
- CE & RoHS Compliant

Options
- Adjustable emissivity from 0.1 to 1.00 in 0.01 steps
- High distance to spot ratios
- Electronic trigger lock
- Temperature data storage
- Available alarms

Models

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9930-IRT Standard non-contact IRT kit - includes 9V battery, instruction manual, and certificate of calibration</td>
</tr>
<tr>
<td>9952-IRT Professional non-contact IRT kit - includes 9V battery, instruction manual, certificate of calibration, and reinforced holster case</td>
</tr>
<tr>
<td>9975-IRT High Performance HDS non-contact IRT kit - includes 9V battery, instruction manual, certificate of calibration, &amp; heavy-duty carrying case</td>
</tr>
</tbody>
</table>

* All items in bold are normally in factory stock.

Applications

- Semiconductor Manufacturing
- Circuit Terminal Testing
- Electrical Troubleshooting
- HVAC Inspection
- Auto Repair & Maintenance
Specifications

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
<th>9930-IRT</th>
<th>9952-IRT</th>
<th>9975-IRT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance/Spot Ratio</td>
<td>8:1</td>
<td>12:1</td>
<td>50:1</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-4 ~ 605°F (-20 ~ 320°C)</td>
<td>-25 ~ 999°F (-32 ~ 535°C)</td>
<td>-25.6 ~ 2373°F (-32 ~ 1300°C)</td>
</tr>
<tr>
<td>Accuracy (Assumes Operation Ambient whichever is greater)</td>
<td>±2% of reading or ±3°F</td>
<td>±5°F (±3°C) From -25 ~ -4°F (-32 ~ -20°C)</td>
<td>±5°F (±3°C) -25.6 ~ -4°F (-32 ~ -20°C)</td>
</tr>
<tr>
<td>Temperature of 25°C/77°F</td>
<td>±3°F (±2°C) From -4 ~ 212°F (-20 ~ -100°C)</td>
<td>±3°F (±2°C) -4 ~ 212°F (-20 ~ 100°C)</td>
<td>Above 212°F (100°C); ±2%</td>
</tr>
<tr>
<td>Thermopile</td>
<td>5–14μm</td>
<td>5–14μm</td>
<td>8–14μm</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±2°F (±1°C)</td>
<td>±2°F (±1°C)</td>
<td>±2°F (±1°C)</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.5°F (0.5°C)</td>
<td>0.1°F (0.1°C)</td>
<td>0.1°F OR 0.1°C (Above 2000°F; 1°F)</td>
</tr>
<tr>
<td>Response Time</td>
<td>500ms</td>
<td>500ms</td>
<td>500ms</td>
</tr>
<tr>
<td>Operation Temp</td>
<td>0–50°C (32–122°F), 10–90%RH</td>
<td>0–50°C (32–122°F), 10–90%RH</td>
<td>0–50°C (32–122°F), 10–90%RH</td>
</tr>
<tr>
<td>Auto Power Off</td>
<td>Automatically after approx. 6sec</td>
<td>Automatically after approx. 6sec</td>
<td>Automatically after approx. 6sec</td>
</tr>
<tr>
<td>Emissivity</td>
<td>Fixed at 0.95</td>
<td>0.95</td>
<td>Adjustable 0.1–1.0</td>
</tr>
<tr>
<td>Dimensions</td>
<td>5.9” x 5.2” x 1.8” (150x133x45mm)</td>
<td>6.7” x 5.2” x 1.8” (170mm x 133mm x 45mm)</td>
<td>7.9” x 6.5” x 2.0” (200 x 166 x 51mm)</td>
</tr>
<tr>
<td>Weight (with Battery)</td>
<td>5.44 oz (169g)</td>
<td>7.12 oz (222g)</td>
<td>9.02 oz (281g)</td>
</tr>
<tr>
<td>°F/C Switchable</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Backlight</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Laser Sight Switchable</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Max/Min/Avg/ΔT</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Auto-measuring</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>10 Point Memory</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Audio Alarm</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Tripod Mount</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Dual Display</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
</tr>
</tbody>
</table>

LCD Display

Model 99
Infrared
Non-Contact Thermometer

Infrared Non-Contact Thermometer

9930-IRT
9952-IRT
9975-IRT

LCD Display

Low battery
Laser On/Off
°F/°C Control Button
Scan/hold
°C/°F Indication
Temperature Display
Laser Control Button

Scan/hold/Auto mode indication
Laser on/off indication
Data Memory indication
°C/°F unit indication
Temperature indication
Low battery
Up value button
Function button

Scan/hold/Auto mode indication
Laser on/off indication
Data Memory indication
°C/°F unit indication
Temperature indication
Low battery
Up value button
Function button

Scan/hold/Auto mode indication
Laser on/off indication
Data Memory indication
°C/°F unit indication
Temperature indication
Low battery
Up value button
Function button

Scan/hold/Auto mode indication
Laser on/off indication
Data Memory indication
°C/°F unit indication
Temperature indication
Low battery
Up value button
Function button

Low battery
Data Battery
Log Data
ΔT/Emissivity
High/Low Alarm
Memory Button
Down Button

Scan/hold/Auto mode indication
Laser on/off indication
Data Memory indication
°C/°F unit indication
Temperature indication
Low battery
Up value button
Function button

Dowm button
Up button
Lock key
Mode key

www.redingtoncounters.com
## Description

The Redington Models E2 & E3 offer an electronic version of the popular Hand Tally counter and are available with a choice of Add only or Add/Subtract models. Counts are input using large positive action buttons. The Add model has a single count button and the Add/Subtract model has two separate count buttons. The “+” button (green) will add a count to the total and the “-” button (red) will subtract a count from the total. When activated, an audible “beeper” sounds every count to verify that a count has been registered. All electronic components provide a long life counter with no moving parts to wear out. The counter is manufactured from impact-resistant plastic, combining lightweight with outstanding durability.

## Features

<table>
<thead>
<tr>
<th>E2-1804</th>
<th>Electronic Hand Tally (Add only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3-1804</td>
<td>Electronic Hand Tally (Add/Subtract)</td>
</tr>
</tbody>
</table>

- Add or Add/Subtract models
- Beep at every count with the option of switching the sound off for silent operation
- Cannot accidentally reset or turn off; On/Off/Reset button must be held down for 3 seconds to reset
- Long life battery (replaceable) - typically 250 days without sound
- Large LCD display
- No mechanical parts to wear out
- Large rubber buttons for comfort of use
- Ergonomically designed for ease of use
- Carrying cord - 9.0” [229mm]
- Light weight

## Specifications

| Display: 4 digit LCD 0.35” [9mm] high |
| Battery Operating Life: 250 days (without sound) |
| Reset: Push button |

| Operating Temperature: +32°F to +122°F [0°C to +50°C] |
| Weight: 0.7 oz (20g) |
| Color: Black case with blue buttons (Add Only) or green and red buttons (Add/Subtract) |

## Dimensions

- 2.4” L x 1.4” W x 0.6” D [60mm x 35mm x 15mm]

## Operating Instructions

- Press On/Off/Reset button to power ON the unit
- Add model - Press count button to increment count
- Add/Subtract model - Press the “+” button to Add, Press “-” button to Subtract
- To reset counter press the On/Off/Reset button for 3 seconds
- To switch the sound Off/On at any time, hold the count button down for 3 seconds
- To turn Off, press the On/Off/Reset for 3 seconds when counter display is at “0”

## Battery Replacement

- Use 1 type AG10 1.5 V or equivalent
- Observe polarity (+) during replacement

## Applications

- Inventory
- Attendance
- Traffic
- Food portions
- Blood cells
The Redington Model E45-1804 provides the user with an economical upgrade from the traditional mechanical modular tally counters and at a lower cost. A single module displays five 4-digit LCD's counters, internal 5-digits (99999), total counter is 6-digits (999999), and provides RS-232C serial communications. All of the stored data, maximum of 99 records, (count data, sum data) on the E45-1804 can be read and viewed on a PC through serial communications. The 4 least significant digits of the counter can be viewed on the display. To view all 5 digits, please use the communications feature of the unit to recall the complete internal counter data. Free software is available from our web site, redingtoncounters.com. The Model E45-1804 is self powered by 4 AAA batteries, which makes it ideal for field use. It has non-volatile memory. During battery replacement the memory of stored data will be retained. After the batteries are replaced the original data will be displayed.

Features
- Communications functions to PC; convenient for totaling and analyzing
- Battery life - 200 hours (low battery indicator)
- 7 segment LCD (digit size: 0.2” [5mm] height)
- Memory storage for 99 data records
- Internal 5-digit counter and 6-digit total counter
- Strap for lanyard
- Classification sticker
- Light weight (1/3 of a traditional metal type)
- Excellent tactile feel buttons
- Modular construction allows connecting multiple counters

Specifications
- Display: LCD 4 digits height 0.2” [5mm] counters (x5)
  6 digits total counter & record number
- Reset: Push button
- Memory: Maximum of 99 records
- Dimensions: 2.44” (H) x 5.5” (W) x 0.83” (D)
  [62 (H) x 140 (W) x 21 (D) mm]
- Accessories: Instruction manual, batteries (4), stickers (5)
- Approvals: CE compliant
- Weight: 5oz [130g] (batteries included)
- Data Output: RS-232 PC Serial Interface
- Battery Operating Life: 200 hours, power off when not in use (4)
  AAA (1.5) alkaline type batteries
- Software/Operating Instructions: Download from Redington web site
- Communications Cable: Use any market available RS 232 cable
  (straight) to connect to the PC and a D-SUB 9 pin (female) connector for connection to
  the E45-1804
- Data Output: RS-232 PC Serial Interface
- Operating Temperature: 14°F to 122°F [-10°C to 50°C] 85% RH max.

Models
- E45-1804 Electronic Multi Tally (x5 LCD) with serial communications
  * Item is normally in factory stock.

Applications
- Traffic
- Lab Counter
- Inventory
- Attendance
Description

The Redington Model E5 is an electronic hand tally with a 4.5-digit main display and two 4-digit sub-displays. The tally has 4 selectable modes that are user settable by internal DIP switch position. Depending on the DIP switch setting specific modes of operation can be chosen. The unit has a built in buzzer that can be enabled or disabled by pressing and holding the Reset button.

Operating Modes:

1). Simple Hand Tally- Add & subtract count, reset and memory storage.

2). Two counter Tally- Two tally’s, reset and selectable add or subtract count with either tally.

3). Three rotating Tally counters- Three independent tally counters. These counters can be rotated or shifted in a clockwise manner.

4). Multiple memory Tally- This is an add tally with a multiple number of memories for storing count value. It has two operating modes, count mode and memory mode. The user can transfer the displayed count to a memory. Each time the user stores count values the memory number increments.

Physical Nomenclature:

- 4 function buttons
- Large LCD display
- Button type battery operated; use type CR2032 or equivalent. Observe polarity (+/-) during replacement.

Mode Selection:

An internal DIP Switch is available to select four different modes. Depending on the setting of a 2-bit DIP Switch a specific mode can be selected. The E5-1804 is shipped from the factory in Mode 1. The table below shows the corresponding DIP Switch configuration:

<table>
<thead>
<tr>
<th>MODE</th>
<th>SWITCH 1</th>
<th>SWITCH 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode 1</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Mode 2</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>Mode 3</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td>Mode 4</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

To change the mode:

1. First remove the internal battery
2. Set the internal DIP switches to the new mode
3. Reinstall the battery

The buttons assigned to each function per specific mode is given below:

<table>
<thead>
<tr>
<th>MODE</th>
<th>Up</th>
<th>Down</th>
<th>Reset / Store</th>
<th>No Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode 1 Simple Tally</td>
<td>Up</td>
<td>Down</td>
<td>Reset / Store</td>
<td>No Function</td>
</tr>
<tr>
<td>Mode 2 2 Counter Tally</td>
<td>Count UP (Counter 1)</td>
<td>Count UP (Counter 2)</td>
<td>Reset</td>
<td>Select (+/-)</td>
</tr>
<tr>
<td>Mode 3 3 Rotating Counters</td>
<td>Up</td>
<td>Down</td>
<td>Reset</td>
<td>Shift</td>
</tr>
<tr>
<td>Mode 4 Multiple Memory</td>
<td>Up</td>
<td>Mem / Store</td>
<td>Reset</td>
<td>Mode</td>
</tr>
</tbody>
</table>
**Features**

- User friendly four programmable modes
- Add, add/subtract, store memory, and rotate or shift display
- 1 main and 2 sub displays
- Lightweight
- No mechanical parts to wear out

- Replaceable battery
- Beep at every count that can be enabled or disabled by pressing and holding the reset button
- Includes 22.4” 570mm carrying cord
- Large LCD screen; display is always on

**Specifications**

- **Display:**
  - Main display: LCD 4.5 digits (19999); 0.39” [10mm]
  - Sub displays: 4 digits (9999); 0.19” [5mm]
- **Reset:** Push button
- **Color:** Black
- **Weight:** 1.4 oz [40g] including battery

  * Take note that 4.5 digits (-9999 – 19999) is only applicable in Mode 4. Up to 4 digits are applicable in Modes 1, 2, & 3.

**Models Description**

E5-1804  Electronic Hand Tally; 3 displays; add/subtract; store count and memory

  * Item is normally in factory stock.

**Operating Instructions**

**MODE 1**

**Mode 1** is a simple add/subtract counter with two temporary memory displays.

<table>
<thead>
<tr>
<th>Buttons Active:</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE</td>
</tr>
<tr>
<td>Up</td>
</tr>
<tr>
<td>Down</td>
</tr>
<tr>
<td>Reset</td>
</tr>
</tbody>
</table>

**Display Area:**

**GENERAL DISPLAY**
- Upper Left Display
- Upper Right Display

**OPERATIONAL DISPLAY**
- Previous Count Value
- Current Count Value

**Count Operation:**

In this mode you can count up from 0 to 9999 by pressing the Up button. You can also count down to -9999 by pressing the Down button. Each actuation of the Up button will increment the count values by 1, likewise, pressing Down button will decrement the count value by 1. If the count value reaches the maximum and minimum limit the next display will be an error message (Err). Pressing the Reset button will display the current count value to the upper left display and reset the count value on the main display.

**Reset Operation:**

This mode has 2 temporary memories that store the last 2 count values on the upper right and upper left display. When you press the Reset button the main display will be rest to 0 and the value prior to reset will be displayed on the upper left display, while the value on the upper left display will be shifted to the upper right display. Every time the reset button is pressed the last count values will be shifted again from the main display, to the upper left display, and the upper left display to the upper right.

**MODE 2**

Mode 2 is a two counter tally with selectable add/subtract feature.

<table>
<thead>
<tr>
<th>Buttons Active:</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE</td>
</tr>
<tr>
<td>Type 2</td>
</tr>
<tr>
<td>2 Counter Tally</td>
</tr>
</tbody>
</table>

**Display Area:**

**GENERAL DISPLAY**
- Counter Value

**ROTATED DISPLAY**
- Counter Value

**MODE 3**

Mode 3 is an add/subtract counter with three independent counters. These counters can be rotated or shifted in a clockwise manner.

<table>
<thead>
<tr>
<th>Buttons Active:</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE</td>
</tr>
<tr>
<td>Type 3</td>
</tr>
<tr>
<td>3 Up/Down Counter</td>
</tr>
</tbody>
</table>

**Display Area:**

**GENERAL DISPLAY**
- Counter Value

**ROTATED DISPLAY**
- Counter No.
Count Operation:
In this mode you can program to count up/add from 0 to 19999 by pressing the button. You can also count down/subtract to -9999 by pressing the button. Each press of the button will increment the count value by 1, likewise, pressing the button will decrement the count value by 1. If the count value reaches the maximum and minimum limit the next display will be an error (Err) message. Pressing the button will reset the current count value to 0. To identify which counter is the current display a counter number is display on the right side of the main display.

Rotate/Shift Operation:
This program has 3 independent counters. To rotate/shift these counter press the button. The counter number of the current display is shown on the right side of the main display. Its corresponding count value is also displayed on the main display. The values of the other two counters are also shown on the upper right and upper left portion of the display. These values cannot be changed unless they are selected. Pressing the button will only reset the current counter value. To reset the other counters you must rotate/shift and reset every single counter until all three of them are reset to 0.

MODE 4
Mode 4 is an add counter with 59 memory locations for storing count values. It has two operating modes, count and memory mode.

Buttons Active:

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Count</th>
<th>Up</th>
<th>MEM</th>
<th>Reset</th>
<th>Shift</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 4 Counter</td>
<td></td>
<td>Scroll Up</td>
<td>Scroll Down</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Battery Replacement
When the display becomes faint or disappears, it indicates a low battery condition. Replace the battery when this occurs.

1. Remove the screw at the lower back of the unit and remove the back cover by lifting it.

2. Slide the battery from the left side to the right (1) and lift the battery from the battery holder (2). (See “removing” diagram below)

3. To install a new battery, insert the battery from left to right (1) and push down the battery until it locks on the battery holder (2). (See “installing” diagram below)

Make sure that the battery is installed properly according to the indicated polarity on the battery holder.

- Take note that this counter does not have a memory. All stored data will be erased when battery becomes low or changed.
- The unit is shipped with a battery installed and battery life may be shorter than the indicated specification. However, if a new battery is installed, battery life will be according to indicated specification.
- Remove the battery when the device will not be used for a long period of time.

Applications
Traffic  Lab Counter  Inventory  Attendance
Model 08

Mechanical Rotary Counter

Description

A 5 figure medium duty counter designed for applications where a rotary counter with a quick reset is desirable. When a 1’ circumference measuring wheel is used with our standard counter, the counter will display feet and inches. Consult the factory if you have custom applications.

Features

- Counter will add and subtract
- Push button reset
- Versatile mounting
- 1,000 revolutions per minute (100 feet per minute)

Options

- Double shaft
- Wheel color
- Figure color
- Ratios
- Mounting
- Case color
- 98WF - Measuring Wheel - 12” circumference

Specifications

Figures: 5 figures, 0.20” [5mm] high
Reset: Push-button
Rotation: Top going
Shaft Extension: 0.250” diameter, left hand or right hand

Speed: 1,000 revolutions/minute (100 feet/minute)
Operation Life: Beyond 50 million
Temp. Range: -15°F to 140°F [-26°C to +60°C]
Weight: 10 oz. [283g]

Models | Description | Models | Description
--- | --- | --- | ---
11-0825 | Left-hand, top-going, add & subtract | 11-0845 | Right-hand, top-going, add & subtract

Dimensions

Left - Hand Shaft

Applications

- Linear measuring
- Machine revolutions
- Positioning

www.redingtoncounters.com
Model 20
Mechanical Stroke Counter

Description
A highly versatile, 5 figure stroke counter. Numbers are large and distinctive for easy viewing even when above or below eye level. Ruggedly built for years of trouble-free use. An excellent choice for counting parts produced.

Features
- Durable
- Large figures
- Reliable

Options
- Non-reset
- Large reset knob

Specifications

<table>
<thead>
<tr>
<th>Features</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figures: 5 figures, white on black, 0.19” [5mm] high</td>
<td>Shaft Extension: Right-hand or left-hand</td>
</tr>
<tr>
<td>Reset: Knob</td>
<td>Shaft Diameter: 0.125” [3.2mm]</td>
</tr>
<tr>
<td>Speed: 500 counts/minute</td>
<td>Operating Life: Beyond 10 million counts</td>
</tr>
<tr>
<td>Rotation: Top-coming or top-going</td>
<td>Temp. Range: -15°F to +140°F [-26°C to +60°C]</td>
</tr>
<tr>
<td>Count Stroke: 49° Min. - 60° Max.</td>
<td>Weight: 1.5 oz. [43g]</td>
</tr>
</tbody>
</table>

Models

<table>
<thead>
<tr>
<th>Description</th>
<th>Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2015 Left-hand, top-coming, standard reset knob</td>
<td>1-2035 Right-hand, top-coming, standard reset knob</td>
</tr>
<tr>
<td>1-2025 Left-hand, top-going, standard reset knob</td>
<td>1-2045 Right-hand, top-going, standard reset knob</td>
</tr>
</tbody>
</table>

* Items in bold are normally in factory stock.

Dimensions

Right-Hand Shaft

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.83 [21.1]</td>
<td></td>
</tr>
<tr>
<td>1.21 [30.6]</td>
<td></td>
</tr>
<tr>
<td>2.16 [54.9]</td>
<td></td>
</tr>
<tr>
<td>3.18 [80.8]</td>
<td></td>
</tr>
<tr>
<td>0.12 [3.2]</td>
<td></td>
</tr>
<tr>
<td>0.42 [10.7]</td>
<td></td>
</tr>
<tr>
<td>1.33 [33.8]</td>
<td></td>
</tr>
<tr>
<td>0.99 [25.2]</td>
<td></td>
</tr>
<tr>
<td>1.44 [36.5]</td>
<td></td>
</tr>
</tbody>
</table>

Mounting holes: 0.13” x 0.38” [3 x 9.7mm] slots

Applications

- Punch press
- Machine cycles
- Secondary machines
**Model 22**

**Mechanical Rotary Counter**

---

**Description**

A compact, 5 figure, rotary counter, indicating 10 counts/revolution. Design and compact size make it ideally suited for office and test equipment, coin counting and other direct reading instruments.

**Features**

- Compact size
- 5 figures
- Long life

**Options**

- Large reset knob
- Special shaft

**Specifications**

<table>
<thead>
<tr>
<th>Figures:</th>
<th>Shaft Diameter:</th>
<th>Ratio:</th>
<th>Operating Life:</th>
<th>Temp. Range:</th>
<th>Weight:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 figures, white on black, 0.19'' [5mm] high</td>
<td>0.125'' [3.2mm]</td>
<td>10 counts/revolution</td>
<td>Beyond 10 million counts</td>
<td>-15°F to +140°F [-26°C to +60°C]</td>
<td>1.3 oz. [37g]</td>
</tr>
</tbody>
</table>

**Speed:**

- 500 revolutions/minute

**Rotation:**

- Top-coming or top-going

**Shaft Extension:**

- Right-hand or left-hand

**Models**

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2215</td>
<td>Left-hand, top-coming, add only</td>
</tr>
<tr>
<td>1-2225</td>
<td>Left-hand, top-going, add only</td>
</tr>
<tr>
<td>1-2235</td>
<td>Right-hand, top-coming, add only</td>
</tr>
<tr>
<td>1-2245</td>
<td>Right-hand, top-going, add only</td>
</tr>
<tr>
<td>7-2215</td>
<td>Left-hand, top-coming, add and subtract</td>
</tr>
<tr>
<td>7-2225</td>
<td>Left-hand, top-going, add and subtract</td>
</tr>
<tr>
<td>7-2235</td>
<td>Right-hand, top-coming, add and subtract</td>
</tr>
<tr>
<td>7-2245</td>
<td>Right-hand, top-going, add and subtract</td>
</tr>
<tr>
<td>1-2315</td>
<td>Left-hand, top-coming, add and subtract, non-reset</td>
</tr>
<tr>
<td>1-2325</td>
<td>Left-hand, top-going, add and subtract, non-reset</td>
</tr>
</tbody>
</table>

* Items in bold are normally in factory stock.

**Dimensions**

**Right-Hand Shaft**

Mounting holes: 0.13'' x 0.38'' [3.3 x 9.7] slots

**Applications**

- Production equipment
- Spooling
- Positioning
Model 27 Mechanical Stroke Counter

Description

A heavy-duty, 5 figure, internal reset, stroke counter. Available in either right-hand or left-hand shaft extension.

Features

- Heavy-duty
- Internal reset

Options

- Right or left-hand shaft extension
- 1022-006S - additional spring

Specifications

- Figures: 5 figures, white on black, 0.31" [8mm] high
- Reset: Internal - lift cover, reset wheels
- Speed: 750 counts/minute
- Rotation: Top-coming
- Count Stroke: 36° Min. - 45° Max.

shaft Extension:

- Right-hand or left-hand

Operating Life:

- Beyond 200 million counts

Temp. Range:

- -15°F to +140°F [-26°C to +60°C]

Weight:

- 24 oz. [680g]

Models

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2715</td>
<td>Left-hand, top-coming</td>
<td>1-2735</td>
<td>Right-hand, top-coming</td>
</tr>
</tbody>
</table>

* Items in bold are normally in factory stock.

Dimensions

Right-Hand Shaft

Mounting holes: 0.19'' [4.8mm] Dia.

Applications

- Punch press
- Secondary Machines
- Machine cycles

www.redingtoncounters.com 37
Model 28
Mechanical
Stroke Counter

Description
A 5 figure, rugged stroke counter, with right-hand shaft extension, operating lever and attached spring. Rated at 600 counts per minute, this heavy-duty model is well suited for most industrial applications.

Features
- Heavy-duty
- 600 CPM
- 5 Figures

Options
- Lever modifications
- 1022-006S - additional spring

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Figures:</td>
<td>5 figures, white on black, 0.27&quot; [7mm] high</td>
<td></td>
</tr>
<tr>
<td>Reset:</td>
<td>Knob, internal, or lock and key</td>
<td></td>
</tr>
<tr>
<td>Speed:</td>
<td>600 counts/minute</td>
<td></td>
</tr>
<tr>
<td>Rotation:</td>
<td>Top-coming</td>
<td></td>
</tr>
<tr>
<td>Count Stroke:</td>
<td>36° Min. - 45° Max.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specifications</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaft Extension:</td>
<td>Right-hand</td>
<td></td>
</tr>
<tr>
<td>Operating Life:</td>
<td>Beyond 200 million counts</td>
<td></td>
</tr>
<tr>
<td>Temp. Range:</td>
<td>-15°F to +140°F [-26°C to +60°C]</td>
<td></td>
</tr>
<tr>
<td>Weight:</td>
<td>20 oz. [567g]</td>
<td></td>
</tr>
</tbody>
</table>

Models Description

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-2835</td>
<td>Right-hand, top-coming, internal reset</td>
</tr>
<tr>
<td>4-2835</td>
<td>Right-hand, top-coming, knob reset</td>
</tr>
<tr>
<td>5-2835</td>
<td>Right-hand, top-coming, lock and key reset</td>
</tr>
</tbody>
</table>

* Items in bold are normally in factory stock.

Dimensions

Right - Hand Shaft

Mounting holes: 0.18" [4.6mm] Dia.

Applications

- Punch press
- Machine cycles
- Shears
Model 29 Mechanical Rotary Counter

Description
A 6 figure, general purpose heavy duty industrial stroke counter designed for high count rates and continuous operation even under the most adverse operating conditions. Corrosion resistant material and finishes. Large, easy-to-read numbers.

Features
- Heavy duty
- High count rates
- Corrosion resistant

Options
- Non-reset
- Double shaft extensions
- Special mounting bases
- Weatherized versions
- 1022-006S - additional spring
- 1255-004S - additional lever

Specifications
Figures: 6 figures, white on black, 0.30'' [7.6mm] high
Reset: Knob or lock and key
Speed: 1,000 counts/minute
Rotation: Top-coming or top-going
Count Stroke: 40° Min. - 70° Max.

Shaft Extension: Right-hand or left-hand
Shaft Diameter: 0.25'' [6.4mm]
Operating Life: Beyond 100 million counts
Temp. Range: -15°F to +140°F [-26°C to +60°C]
Weight: 18 oz. [510g]

Models
<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2916</td>
<td>Left-hand, top-coming, standard reset knob</td>
</tr>
<tr>
<td>1-2926</td>
<td>Left-hand, top-going, standard reset knob</td>
</tr>
<tr>
<td>1-2936</td>
<td>Right-hand, top-coming, standard reset knob</td>
</tr>
<tr>
<td>1-2946</td>
<td>Right-hand, top-going, standard reset knob</td>
</tr>
<tr>
<td>2-2936</td>
<td>Right-hand, top-coming, lock and key reset</td>
</tr>
<tr>
<td>V1-2936</td>
<td>Right-hand, top-coming, standard reset knob, V-base</td>
</tr>
</tbody>
</table>

* Items in bold are normally in factory stock.

Dimensions

Right - Hand Shaft

V - Mount

Mounting holes: 0.22'' [5.6mm] Dia.

Applications
- Punch presses
- Shears
- Cement trucks

www.redingtoncounters.com
Description
A 6 figure, general purpose, industrial rotary counter designed for use on equipment where environmental conditions are far from ideal. Various count ratios make it suitable for winding equipment, measuring devices and direct reading instruments.

Features
- Heavy duty
- High count rates
- Corrosion resistant

Options
- Non-reset
- Subtractive
- Double shaft extensions
- Special mounting bases
- Weatherized versions
- 98WF - Measuring Wheel - 12" circumference

Specifications

<table>
<thead>
<tr>
<th>Features</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figures: 6 figures, white on black, 0.30&quot; [7.6mm] high</td>
<td>Shaft Extension: Right-hand or left-hand</td>
</tr>
<tr>
<td>Reset: Knob or lock and key</td>
<td>Shaft Diameter: 0.25&quot; [6.4mm]</td>
</tr>
<tr>
<td>Speed: 2,500 counts/minute or revolutions/minute, whichever is lower</td>
<td>Ratio: 1 count/revolution or 10 counts/revolution</td>
</tr>
<tr>
<td>Rotation: Top-coming or top-going, to add.</td>
<td>Operating Life: Beyond 100 million counts</td>
</tr>
<tr>
<td>Will not subtract if rotation is reversed</td>
<td>Temp. Range: -15°F to +140°F [-26°C to +60°C]</td>
</tr>
<tr>
<td>Weight: 18 oz. [510g]</td>
<td></td>
</tr>
</tbody>
</table>

Models | Description | Models | Description |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11-2916</td>
<td>Left-hand, top-coming, 10 counts/revolution</td>
<td>21-2936</td>
<td>Right-hand, top-coming, 1 count/revolution</td>
</tr>
<tr>
<td>11-2936</td>
<td>Right-hand, top-coming, 10 counts/revolution</td>
<td>21-2946</td>
<td>Right-hand, top-coming, 1 count/revolution</td>
</tr>
<tr>
<td>21-2916</td>
<td>Left-hand, top-coming, 1 count/revolution</td>
<td>22-2936</td>
<td>Right-hand, top-coming, 1 count/revolution, lock &amp; key reset,</td>
</tr>
<tr>
<td>21-2926</td>
<td>Left-hand, top-going, 1 count/revolution</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dimensions

Right - Hand Shaft

Applications
- Winding equipment
- Spooling
- Positioning

Mounting holes: 0.22" [5.6mm] Dia.
Model 41

Mechanical Register

Description

The Model 41 is a 3-figure or 4-figure mechanical register and is used to display gallons or liters output from a dispenser or pump. The large figure display can be reset with the rotary reset shaft. A smaller, non-reset, mechanical totalizer is also included to record total product dispensed.

Features

- Large easy to read figures
- Time tested, reliable and durable
- Wide operating temperature range
- All non-corrosive parts
- Spring loaded totalizer is pre-settable
- No lubrication required

Options

- Gallons or liters
- Reset shaft configuration
- Reset shaft: right hand, left hand, or both

Specifications

**Figures:**
- **Main Display:** 3 or 4 figures, white on black, 0.65" [16.5mm] high
- **Totalizer:** 0.19" [5mm] white on black
- **Reset:** Rotary reset. Reset knob supplied by customer
- **Reset Shaft:** 0.25" [6.4mm] diameter

**Speed:**
- 40 gallons per/minute, 400 liters per/minute

**Operation Life:**
- 1 million gallons, 10 million liters

**Temp. Range:**
- -40°F to +150°F [-40°C to +65°C]

**Weight:**
- 3-figure - 9oz [255g], 4-figure - 11oz [312g]

Models

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4103</td>
<td>3-figures, gallon display</td>
<td>2-4103</td>
<td>3-figures, liter display</td>
</tr>
<tr>
<td>2-4104</td>
<td>4-figures, gallon display</td>
<td>3-4104</td>
<td>4-figures, liter display</td>
</tr>
</tbody>
</table>

Dimensions

3-Figure

![3-Figure Diagram](image)

4-Figure

![4-Figure Diagram](image)

Applications

- Pumps and Flow Meters

www.redingtoncounters.com
Description

These 5 figure stroke counters are especially designed for limited space and high count life applications. The advanced drive system translates into exceptionally high operating speeds, extended operating life, for fast and accurate readings. Ideal for copiers, printing presses, cut-off machines, and piece-part counting applications. Also available with a thumb lever for use as a tally counter.

Features

- Compact size
- Reliability
- Low cost

Options

- Special levers
- 10011-001S - additional spring
- 10007-009S - lever and spring
- Non-reset - consult factory

Specifications

| Figures:     | 5 figures, white on black, 0.19" [5mm] high |
| Reset:       | Standard or large knob, non-reset           |
| Speed:       | 500 counts/minute                           |
| Rotation:    | Top-coming or top-going                     |
| Count Stroke:| 40° Min. - 45° Max.                          |
| Shaft Extension: | Right-hand or left-hand                      |
| Shaft Diameter:   | 0.156" [4.0mm]                                |
| Operating Life:  | Beyond 5 million counts                      |
| Temp. Range:   | -15°F to +140°F [-25°C to +60°C]              |
| Weight:       | 2 oz. [57g]                                  |

Models | Description
1-4615 | Left-hand, top-coming, standard reset knob
1-4625 | Left-hand, top-going, standard reset knob
1-4635 | Right-hand, top-coming, standard reset knob
1-4645 | Right-hand, top-going, standard reset knob
1-4635T | Right-hand, top-coming, std. reset knob, with thumb lever
2-4615 | Left-hand, top-coming, large reset knob
2-4625 | Left-hand, top-going, large reset knob
2-4635 | Right-hand, top-coming, large reset knob
2-4645 | Right-hand, top-going, large reset knob

* Items in bold are normally in factory stock.

Dimensions

| Non-reset | 2.38 [60.5] |
| 1.20 [30.4] |
| .81 [20.5] |
| 1.53 [38.9] |
| 4 x 13 x 24 [3.3 x 6.1] SLOTS |

| Reset | 2.53 [64.3] |
| 1.20 [30.5] |
| .81 [20.6] |
| 1.52 [38.6] |

Mounting holes: 0.13" x 0.24" [3.3 x 6.1mm] slots

Applications

- Copiers
- Printing presses
- Farm equipment
- Piece-part counting
- Cut-off machines
Model 750
Mechanical Revolution Counter

Description
These rugged revolution counters are completely sealed, tamper resistant, and maintenance-free. They can be mounted on a rotating shaft or wheel. Adds in either direction, and records revolutions, miles, kilometers, or acres. They are used on material handling equipment, farm machinery, rapid transit vehicles, street sweepers, golf carts, and construction equipment.

Features
- Sealed
- Tamper resistant
- Bi-directional

Options
- Face plate
- Custom calibrations

Specifications

<table>
<thead>
<tr>
<th>Figures:</th>
<th>7 figures, 0.19&quot; [5mm] high</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp. Range:</td>
<td>-50°F to +180°F [-45°C to +82°C]</td>
</tr>
<tr>
<td>Weight:</td>
<td>1.5 Lbs. [0.7kg]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>750-0002</td>
<td>Reading x 10 = Total Revolutions (Revolutions)</td>
<td>750-0114</td>
<td>Reading x 100 = Revolutions (Revolutions)</td>
</tr>
<tr>
<td>750-0007</td>
<td>(9.5L - 15) x 15' (Acres)</td>
<td>750-0156</td>
<td>798 Revolutions per Acre (Acres)</td>
</tr>
<tr>
<td>750-0016</td>
<td>364 Revolutions per Acre (Acres)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Consult factory for a counter to meet your specific needs.

Dimensions

Hubodometer

Applications
- Rapid transit vehicles
- Farm machinery
- Golf carts
- Construction equipment

www.redingtoncounters.com
**Description**

The Redington Model 34 LCD Totalizer/Preset Counter provides a large display, with 0.28” [7mm] high characters, in industry size housings. The Model 34 counts and displays the number of pulses that appear at its input terminal at a rate of 40 pulses per second (Hz). The input interface handles AC or DC inputs. The Totalizers are available in 7 different housings. All models are totally sealed and are capable of submersion in 6’ [2 meters] of water. A wide operating voltage, 10-300VDC and 20-300VAC, makes the model 34 versatile for all indoor and outdoor applications. All models are NEMA 4/4X, 12, & IP66 rated when used with the optional gasket and have a polarized lens which assures high visibility in an outdoor environment.

Maintenance Meters are offered with a maximum of 3 preset “Redi-Alert’s” icons to alert users when service intervals are due or other periodic timed events are due. Models are available with front panel field or factory programmable alerts. Not only does the display flash to get attention, but it displays a choice of 7 different .08” [2mm] maintenance icons. Models are available with an Open Drain MOSFET output for the actuation of external alarms or indicator lamps. Users can program or specify the count/service interval and flash duration for each Redi-Alert. Flash duration is the amount of time in hours that the specific icon flashes before and after the specified total count. If a front panel manual reset of the Redi-Alert is required, the front panel models with switches must be specified.

**Features**

- Totally sealed from moisture and dirt
- AC or DC voltage input in the same unit
- Compact depth
- Programmable output thresholds
- Preset count value
- Up to 3 Redi-Alerts/7 icons
- Fits in existing panel openings
- Always on display
- A choice of 7 housings
- A choice of reset modes
- Front panel programmable
- Preset Counter with output
- 15+ Year Battery Life

**Specifications**

<table>
<thead>
<tr>
<th>Display</th>
<th>LCD with large 0.28” [7mm] high figures black on light background</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annunciators</td>
<td>LCD 0.08” [2mm]</td>
</tr>
<tr>
<td>Reset</td>
<td>Remote, manual and non-reset</td>
</tr>
<tr>
<td>Accuracy</td>
<td>100% [provided signal meets stated parameters]</td>
</tr>
<tr>
<td>Displays</td>
<td>8 digits (99999999)</td>
</tr>
<tr>
<td>Maximum pulse rate</td>
<td>40 pulses per second (Hz)</td>
</tr>
<tr>
<td>Inputs</td>
<td>10-300VDC and 20-300VAC - 50/60Hz VIH 20VAC or 10VDC minimum VIL 3VAC or 3VDC maximum</td>
</tr>
<tr>
<td>Power</td>
<td>Self powered - battery life 15+ years</td>
</tr>
<tr>
<td>Terminations</td>
<td>Standard 0.250” [6.4mm] spades</td>
</tr>
<tr>
<td>Output</td>
<td>Format: Open-Drain MOSFET with Source connected to Common (see note 3) Maximum Withstanding voltage: 30VDC, reference to Common Maximum Load current: 0.1Amp</td>
</tr>
<tr>
<td>Environmental:</td>
<td>Temperature: (Storage and Operating) -40 to +185˚F [-40 to +85˚C]</td>
</tr>
<tr>
<td></td>
<td>Humidity: 95% RH per SAE J1378</td>
</tr>
<tr>
<td></td>
<td>Vibration: 20g @ 10 to 80 Hz per SAE J1378</td>
</tr>
<tr>
<td></td>
<td>Shock: 44 to 55g’s per SAE J1378</td>
</tr>
<tr>
<td></td>
<td>Dielectric: 1000VAC 50/60 Hz for 1 minute</td>
</tr>
<tr>
<td></td>
<td>Compliance: Compliant to the European WEEE and RoHS Directives</td>
</tr>
<tr>
<td>Sealing</td>
<td>Totally sealed</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Totally sealed from moisture and dirt, NEMA 4/4X, 12, &amp; IP66 compliant from the front when properly mounted using the optional gasket. (Not applicable to Snap-In Model)</td>
</tr>
<tr>
<td>Approvals</td>
<td>UL and cUL Recognized (file # EL1V2.E36690), CE, SAE, NEMA 4/4X/IP66 compliant</td>
</tr>
<tr>
<td>Weight</td>
<td>1oz [28g]</td>
</tr>
</tbody>
</table>
**Functions**

**Preset Counter:** The preset function is centered on the output signal. When the count reaches the preset value, the output signal is turned “on”. The Preset function is count “up”. In addition to the preset function, models are also available with 3 Redi-Alert set points. Upon reaching the preset value the preset can be automatically reset, or it can await an external reset.

**Front Panel Switch Functions:** Front panel switches can be used for reset, display selection and programming. The two front switches are used as follows:

- **SEL:** During programming this switch is used to select options and to move horizontally in the programming chart.
- **RST:** This is the reset switch during normal operation. During programming this switch is used to select options and to move vertically in the programming chart.

**Available Icons**

![SVC SERVICE](image)

![CHG CHANGE](image)

![OIL FILTER](image)

![AIR FILTER](image)

![LAMP](image)

**Dimensions**

**Rectangular Flush Mount**

- Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]
- Maximum Panel Thickness: 0.375” [9.5mm]

**2-Hole Mount**

- Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]

**2-Hole No-Hole Mount**

- Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]
- Maximum Panel Thickness: 0.375” [9.5mm]

**Round Flush Mount**

- Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]
- Maximum Panel Thickness: 0.375” [9.5mm]
Model 34

Electronic LCD Counter

3-Hole Mount

Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]

Snap-In Mount

Panel Cutout: 1.46” [37mm] x 0.95” [24.1mm]

Minimum Panel Thickness: 0.04” [1.0mm]
Maximum Panel Thickness: 0.125” [3.18mm]

Square Flush Mount

Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]

Maximum Panel Thickness: 0.375” [9.5mm]

Notes

1. When interfacing the Model 34 with a Solid State Relay or AC Sensor, the leakage current needs to be considered. Contact the factory or see the application note at www.redingtoncounters.com

2. Exceeding the Absolute Voltage Range and the Absolute Maximum Limits may result in damage to the unit.

3. The open-drain MOSFET acts like an open-collector NPN transistor. Care should be taken since there is no current limiting protection in the unit.

Applications

Medical Devices  Test Equipment  Control Panels  Production Equipment  Office Equipment  Secondary Equipment

www.redingtoncounters.com
# Model 34 Electronic LCD Frequency/Hour Meter

## Description

The Redington Model 34 LCD Frequency/Hour Meter provides a large display, with 0.28" [7mm] high characters, in industry size housings. The Model 34 keeps track of operational hours accumulated on equipment when a frequency input is applied. The unit counts the number of pulses per second. As long as pulsing continues the unit accumulates hours. The input interface handles AC or DC inputs. The Frequency/Hour Meters are available in 7 different housings. All models are totally sealed and are capable of submersion in 6’ [2 meters] of water. A wide operating voltage, 10-300VDC and 20-300VAC, makes the model 34 versatile for all indoor and outdoor applications. All models are NEMA 4/4X, 12, & IP66 rated when used with the optional gasket and have a polarized lens which assures high visibility in an outdoor environment.

Maintenance Meters are offered with a maximum of 3 “Redi-Alert’s” icons 0.08” [2mm] to alert users when service intervals are due or other periodic timed events are due. Models are available with front panel field or factory programmable alerts. Not only does the display flash to get attention, but it displays a choice of 7 different maintenance icons. Models are available as a Preset Timer with a MOSFET output for the actuation of external alarms or indicator lamps. Users can program or specify the service interval and flash duration for each Redi-Alert. Flash duration is the amount of time in hours that the specific icon flashes before and after the service interval. If a front panel manual reset of the Redi-Alert is required the front panel models with switches must be specified.

## Features

- Totally sealed from moisture and dirt
- Fits in existing panel openings (1.45 x 0.95” [36.8 x 24.1mm])
- AC or DC voltage input in the same unit
- Always on display
- Frequency/Hour Meter versions
- A choice of 7 housings
- Compact depth
- A choice of reset modes
- Programmable output thresholds
- Front panel programmable
- Preset Hour Meter/time up or down
- Preset Timer with output
- Up to 3 Redi-Alerts/7 icons

## Specifications

### Display:

- LCD with large 0.28" [7mm] high figures black on light background
- Maximum Withstanding voltage: 30VDC, reference to Common
- Maximum Load current: 0.1Amp

### Run indicator:

- Blinking decimal point

### Reset:

- Remote, manual and non-reset

### Hour Meter Resolution:

- 0.01 or 0.1 Hour, displayed; 1 second, internal

### Accuracy:

- ± 0.1% @ room temperature
- ± 0.2% over the specified temperature range

### Records & Displays:

- 9999999.9 - hours & 1/10’s or 999999.99 - hours & 1/100’s

### Maximum pulse rate:

- 500 pulses per second
- Accuracy is Resolution Dependent, better than 1% for inputs greater than 12 Hz

### Inputs:

- 10-300VDC and 20-300VAC-50/60Hz
- VIH 20VAC or 10VDC minimum
- VIL 3VAC or 3VDC maximum

### Power:

- Self powered - battery life 15+ years

### Terminations:

- Standard 0.250” [6.4mm] spades

### Output:

- Format: Open-Drain MOSFET with Source connected to Common (see note 3)

### Weight:

- 1oz [28g]
**Functions**

**Preset Hour Meter:** The preset function is centered on the output signal. When the time reaches the preset value, the output signal is turned “on”. The Preset function can be either a time “up” or time “down”. In addition to the preset function models are also available with 3 Redi-Alert set points. Upon reaching the preset value the preset can be automatically reset, or it can await on an external reset.

**Front Panel Switch Functions:** Front panel switches can be used for reset, display selection and programming. The two front Panel switches are used as follows:

- **SEL:** During programming this switch is used to select options. The SEL switch is used during programming to move horizontally in the programming flow chart.
- **RST:** This is the reset switch during normal operation. During programming the RST switch is used to enter an option. The RST switch is used during programming to move vertically in the programming flow chart.

**Available Icons**

- **SVC** SERVICE
- **OIL**
- **AIR FILTER**
- **MUFFLER**
- **CHG** CHANGE
- **OIL FILTER**
- **LAMP**

**Dimensions**

**Rectangular Flush Mount**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.45&quot;</td>
<td>36.8mm</td>
</tr>
<tr>
<td>0.95&quot;</td>
<td>24.1mm</td>
</tr>
<tr>
<td>Maximum Panel Thickness</td>
<td>0.375&quot; [9.5mm]</td>
</tr>
</tbody>
</table>

**2-Hole Mount**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.45&quot;</td>
<td>36.8mm</td>
</tr>
<tr>
<td>0.95&quot;</td>
<td>24.1mm</td>
</tr>
<tr>
<td>Maximum Panel Thickness</td>
<td>0.375&quot; [9.5mm]</td>
</tr>
</tbody>
</table>

**2-Hole No-Hole Mount**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.45&quot;</td>
<td>36.8mm</td>
</tr>
<tr>
<td>0.95&quot;</td>
<td>24.1mm</td>
</tr>
<tr>
<td>Maximum Panel Thickness</td>
<td>0.375&quot; [9.5mm]</td>
</tr>
</tbody>
</table>

**Flush Rectangular Mount**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.45&quot;</td>
<td>36.8mm</td>
</tr>
<tr>
<td>0.95&quot;</td>
<td>24.1mm</td>
</tr>
<tr>
<td>Maximum Panel Thickness</td>
<td>0.375&quot; [9.5mm]</td>
</tr>
</tbody>
</table>
Model 34 Electronic LCD Frequency/Hour Meter

PRELIMINARY

Applications

Medical Devices  Test Equipment  Control Panels  Production Equipment  Generator  Secondary Equipment

Notes

1. When interfacing the Model 34 with a Solid State Relay or AC Sensor, the leakage current needs to be considered. Contact the factory or see the application note at www.redingtoncounters.com

2. Exceeding the Absolute Voltage Range and the Absolute Maximum Limits may result in damage to the unit.

3. The open-drain MOSFET acts like an open-collector NPN transistor. Care should be taken since there is no current limiting protection in the unit.

Applications

Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]
Minimum Panel Thickness: 0.04” [1.0mm]
Maximum Panel Thickness: 0.125” [3.18mm]

Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]
Maximum Panel Thickness: 0.375” [9.5mm]

Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]
Maximum Panel Thickness: 0.375” [9.5mm]

Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]
Maximum Panel Thickness: 0.375” [9.5mm]

Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]
Maximum Panel Thickness: 0.375” [9.5mm]
The Redington Model 34 LCD Hour Meter provides a large display, with 0.28" [7mm] high characters, in the industry size housings. The Hour Meters are available in 8 different housings, including a surface mount inductive input model. All models are totally sealed and are capable of submersion in 6 [2 meters] of water. A wide operating voltage, 10-300VDC and 20-300VAC, and inductive input make the Model 34 versatile for all indoor and outdoor applications. All models are NEMA 4/4X, 12, & IP66 rated when used with the optional gasket and have a polarized lens which assures high visibility in an outdoor environment.

Maintenance Meters are offered with a maximum of 3 “Redi-Alerts” to alert users when service is due. Models are available with front panel field or factory programmable alerts. Not only does the display flash to get attention, but it displays a choice of 7 different .08" [2mm] maintenance icons. Models are available as a Preset Timer with a MOSFET output for the actuation of external alarms or indicator lamps. Users can program or specify the service interval and flash duration for each Redi-Alert. Flash duration is the amount of time in hours that the specific icon flashes before and after the service interval. If a front panel manual reset of the Redi-Alert is required the front panel models with switches must be specified.

**Features**

- Totally sealed from moisture and dirt
- AC or DC voltage input in the same unit
- Tachometer/Hour Meter versions
- Compact depth
- Programmable output thresholds
- Preset Hour Meter/time up or down
- Up to 3 Redi-Alerts/7 icons

- Fits in existing panel openings
- Always on display
- A choice of 8 housings
- A choice of reset modes
- Front panel programmable
- Preset Timer with output
- Can be programmed with starting time
- 15+ Year Battery Life

**Specifications**

- **Display:** LCD with large 0.28" [7mm] high figures black on light background
- **Maximum Withstanding voltage:** 30VDC, reference to Common
- **Maximum Load current:** 0.1Amp

- **Run indicator:** Blinking decimal point
- **Environmental:** Temperature: (Storage and Operating) -40 to +185˚F [-40 to +85˚C]
  Humidity: 95% RH per SAE J1378
  Vibration: 20g @ 10 to 80 Hz per SAE J1378
  Shock: 44 to 55g’s per SAE J1378
  Dielectric: 1000VAC 50/60 Hz for 1 minute
  Compliance: Compliant to the European WEEE and RoHS Directives

- **Reset:** Remote, manual and non-reset (remote reset not available on surface mount housing)
- **Sealing:** Totally sealed

- **Hour Meter Resolution:** 0.01 or 0.1 Hour, displayed; 1 second, internal

- **Accuracy:** ± 0.1% @ room temperature
  ± 0.2% over the specified temperature range
- **Protection Against:** Alternator load dump: 150V EMI (Electromagnetic Interface): +400V @ 500Hz inductive switching and reverse polarity

- **Records & Displays:** 9999999.9 - hours & 1/10's or 9999999.99 - hours & 1/100's
- **Enclosure:** Totally sealed from moisture and dirt, NEMA 4/4X, 12, & IP66 compliant from the front when properly mounted using the optional gasket. (Not applicable to Snap-In Model)

- **Power:** Self powered - battery life 15+ years
- **Approvals:** UL and cUL Recognized (file # ELY2.E36690), CE, SAE, NEMA 4/4X compliant

- **Inputs:** 10-300VDC and 20-300VAC-50/60Hz
  VIH 20VAC or 10VDC minimum
  VIL 3VAC or 3VDC maximum

- **Terminations:** Standard 0.250" [6.4mm] spades
  1 meter wire (inductive)

- **Output:** Format: Open-Drain MOSFET with Source connected to Common (see note 3)
- **Weight:** 1oz [28g]
Functions

Preset Hour Meter: The preset function is centered on the output signal. When the time reaches the preset value, the output signal is turned “on”. The Preset function is time “up”. Upon reaching the preset value the preset can be automatically reset, or it can await an external reset.

Inductive Models: The surface mount Inductive unit is designed with an inductive interface. The unit will sense the firing of a spark plug on most small gasoline powered internal combustion engines. The wire lead from the unit is wrapped around the spark plug wire. Inductive models are available with and without tachometers. Most small engines provide 1 spark per RPM, in which case the maximum RPM is 30,000. Some small engines provide 2 sparks per RPM, the maximum RPM is then 15,000. Models are available that can be field (front panel switches) or factory programmed for 1.0, 2.0, or 0.5 sparks/pulses per RPM.

Front Panel Switch Functions: Front panel switches can be used for reset, display selection and programming. The two front Panel switches are used as follows:

SEL: During programming this switch is used to select options. The SEL switch is used during programming to move horizontally in the programming flow chart.

RST: This is the reset switch during normal operation. During programming the RST switch is used to enter an option. The RST switch is used during programming to move vertically in the programming flow chart.

Available Icons

Dimensions

Rectangular Flush Mount

Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]  
Maximum Panel Thickness: 0.375” [9.5mm]

2-Hole Mount

Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]  
Maximum Panel Thickness: 0.375” [9.5mm]

2-Hole No-Hole Mount

Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]  
Maximum Panel Thickness: 0.375” [9.5mm]

Flush Rectangular Mount

Panel Cutout: 1.45” [36.8mm] x 0.95” [24.1mm]  
Maximum Panel Thickness: 0.375” [9.5mm]
**Model 34 Electronic LCD Hour Meter**

### 3-Hole Mount
- Panel Cutout: 1.45" [36.8mm] x 0.95" [24.1mm]

### Snap-In Mount
- Panel Cutout: 1.46" [37mm] x 0.95" [24.1mm]
- Minimum Panel Thickness: 0.04" [1.0mm]
- Maximum Panel Thickness: 0.125" [3.2mm]

### Square Flush Mount
- Panel Cutout: 1.45" [36.8mm] x 0.95" [24.1mm]
- Maximum Panel Thickness: 0.375" [9.5mm]

### Surface Mount
- Maximum Panel Thickness: 0.375" [9.5mm]

### Notes
1. When interfacing the Model 34 with a Solid State Relay or AC Sensor, the leakage current needs to be considered. Contact the factory or see the application note at www.redingtoncounters.com

2. Exceeding the Absolute Voltage Range and the Absolute Maximum Limits may result in damage to the unit.

3. The open-drain MOSFET acts like an open-collector NPN transistor. Care should be taken since there is no current limiting protection in the unit.

### Applications
- Medical Devices
- Generators
- Control Panels
- Production Equipment
- Garden Tractor
- Marine Equipment
Description
The Redington Model 51 line of 5 figure LCD meters provides a large display in the industry size package. A choice of mountings, Round, 2 Hole Dual, Mini Rectangular or Surface Mount. A custom microprocessor, capable of being programmed to create an almost infinite matrix of models is ideally suited for OEM applications. Available in 3 inputs, DC, AC or Inductive. Maintenance Meters are offered with a “Redi-Alert” to alert users when service is due. Not only does the display flash to get attention, but it displays specific maintenance service needs to be done. Units have Polarized LCD for high visibility in sunlight. Servicing equipment on time is critical to efficient operation and long equipment life. That is why you should consider Redington’s “Redi-Alert” meters. Redi-Alert offers two independent alarms (both fully programmable) to alert users when service is due. Alarms are fully automatic; coming on and shutting off at times determined by the OEM.

Features
- Totally sealed from moisture and dirt
- Fits in existing panel openings
- “Redi-Alert” for preventive maintenance
- Icons for specific maintenance needs
- Tachometer/Hour Meter versions
- Automatic rollover
- Hour glass symbol appears & flashes on/off to indicate running time
- Various voltage inputs
- Short depth
- Always on display

Options
- Various voltage inputs
- Alarm outputs: audible or visual (external voltage required)
- Custom logos & bezels
- Terminations: stud, wire, screw, or blade
- Alternator and filtered versions
- Key Kancel (alarm reset via external key or wand)

Specifications
- Display: Large 0.20" [5mm] LCD, black on light background
- Records & Displays: 5 digits (9999.9)
- Resolution: 0.1 hours
- Quartz Accuracy: 0.02% over entire voltage & temp. range
- Inputs: 8-32 VDC, 32-277 VAC-50/60HZ
- Operating Temperature: -40°F to +160°F [-40°C to +71°C]
- Battery Life: 15 years
- Current Consumption: 1 mA (for multi-range voltages 1 mA applies to lower voltage)
- Approvals: AC-UL/cUL Recognized, CE Compliant

Protection Against:
- Transient voltage, inductive switching, reverse polarity, frequency variations
- Alternator Load Dump: 150 V
- Shock: SAE J1378 55g
- Vibration: SAE J1378 20g
- Humidity: SAE J1378 95% RH
- Termination: Panel mount standard terminals, 0.250 male blade (s), surface mount- wire lead
- Case Material: ABS, black, 100% epoxy filled
- Weight: 1 oz. [28g]

Models
<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Models</td>
<td>5120-1000    Panel Mount, Round, 8-32 VDC, Hours &amp; 1/10's</td>
</tr>
<tr>
<td></td>
<td>5120-1100    Panel Mount, Mini, 8-32 VDC, Hours &amp; 1/10's</td>
</tr>
<tr>
<td></td>
<td>5120-1200    Panel Mount, 2 Hole, 8-32 VDC, Hours &amp; 1/10's</td>
</tr>
<tr>
<td>AC Models</td>
<td>5120-2000    Panel Mount, Round, 32-277VAC, 50/60 Hz, Hours &amp; 1/10's</td>
</tr>
<tr>
<td></td>
<td>5120-2100    Panel Mount, Mini, 32-277 VAC, 50/60 Hz, Hours &amp; 1/10's</td>
</tr>
<tr>
<td></td>
<td>5120-2200    Panel Mount, 2 Hole, 32-277 VAC, 50/60 Hz, Hours &amp; 1/10's</td>
</tr>
<tr>
<td>Inductive Models</td>
<td>5120-0000    Panel Mount, Round, Inductive, Hours</td>
</tr>
<tr>
<td></td>
<td>5120-0100    Panel Mount, Mini, Inductive, Hours</td>
</tr>
<tr>
<td></td>
<td>5120-0200    Panel Mount, 2 Hole, Inductive, Hours</td>
</tr>
<tr>
<td></td>
<td>5140-0000    Panel Mount, Round, Inductive, Hours &amp; 1:1Tach</td>
</tr>
<tr>
<td></td>
<td>5140-0100    Panel Mount, Mini, Inductive, Hours &amp; 1:1Tach.</td>
</tr>
<tr>
<td></td>
<td>5140-0200    Panel Mount, 2 Hole, Inductive, Hours &amp; 1:1Tach.</td>
</tr>
<tr>
<td></td>
<td>5120-0310    Surface Mount, Change oil Alert @ 25hr./2 hr. flash Lube Alert @ 25hr./2 hr. flash</td>
</tr>
<tr>
<td></td>
<td>5140-0311    Surface Mount, Inductive, Hours w/1:1Tach.</td>
</tr>
</tbody>
</table>

* Items in bold are normally in factory stock.
Model 51  
Electronic  
LCD Hour Meter/Maintenance Meter

### Alarm Specifications

**Alarms programmable for your applications**

**ALARM # 1**  
Programmable for a “first time” (break in service) or a normal recurring service interval.

**ALARM # 2**  
Same as alarm # 1, but without the “first time” interval.

**ALARM/ FLASH DURATION**  
OEM’s specify the service interval and flash duration for each alarm. Flash duration is the amount of time in hours that the specified icon flashes before and after the service interval.

**ALARM RESET**  
The standard alarm alert is fully automatic with no operator interface necessary. The alarm simply flashes the specified icon for the duration called out by the OEM. Controlled reset options are available for a higher level of security. *Contact factory for additional information.*

### Dimensions

#### 2 Hole Dual Mount

- Above panel cutout: 1.46 x 0.95 [37.1 x 24.1] opening
- Behind panel cutout: 1.41 x 0.93 [35.8 x 23.6] opening

#### Round

- Spring clip retainer, Fast installation
- Panel cutout: 2.0 [50.8] diameter

#### Surface Mount

- Mounting holes are 1 1/2” [38.1] spacing
- Hole Diameter is 1/8” [3.2]

#### Mini Rectangular

- Compact Bezel Design, Spring clip retainer, Fast installation
- Panel cutout: 1.46 x 0.95 [37.1 x 24.1] opening.

### Applications

- Construction Equipment
- Medical Devices
- Generators
- Marine Applications
- Garden Tractors

www.redingtoncounters.com
The Redington Model 56 family of LCD indicators offers a variety of options to fulfill your count/hour meter requirements. This indicator can display hours, counts or both with a single-line shared display. You decide which value should be displayed permanently and which one will be in the background. The background indication will appear for approximately 10 seconds every time you apply power to the meter.

The Model 56 family offers you many features that are set at the factory at your request. These features include, input voltages, maximum count speeds or minimum hour indication times, connector terminations, reset configurations, a Redi-Alert Service Interval feature, and prewarn.

The Model 56 family can be ordered to accommodate any of a number of AC or DC input voltages and reset configurations. The counter can be ordered for maximum input count speeds of 10 Hz for AC or AC/DC voltages and 30 Hz or 200 Hz for DC voltages. The hour meter can be ordered to display time intervals of 1/100th or 1/10th of hours. When using a counter and an hour meter in combination, the counter will count the number of input pulses while the hour meter will record the total duration of the input pulses.

The Redi-Alert Service Interval feature notifies operators of service requirements when service intervals are a function of the number of events or time. If a Redi-Alert Service Interval is specified, the display will show the count (or time) remaining until the service interval is reached. The Redi-Alert Service Interval feature can be considered to be a down-counter (or down-timer) since the count (or time) that is displayed shows what remains until service is required. When the Redi-Alert Service Interval gets to zero, the indicator will flash the display. If the Redi-Alert Service Interval is not reset, the indicator will continue to operate, and the display will show negative counts (or time) indicating how far the system has gone past the service interval. If the prewarn feature is included, the display will begin flashing when the prewarn count (or time) is reached. When the Service Interval is in the background, it will come to the foreground when it reaches the service interval or the prewarn. Resetting the indicator resets the Service Interval to its specified setting and returns the Service Interval to the background.

You can configure your Model 56 meter using the Ordering Information sheet.

### Features
- Display hours or hours and counts
- “Redi-Alert” for service hours or counts
- Manual, remote or non-reset
- EEPROM for memory (no battery)
- Divider/multiplier on inputs
- AC or DC input voltage
- 3 housing configurations
- Choice of 1/100th or 1/10th hours (specify)

### Options
- Input frequency
- Reset type
- Indication of time/count
- Wide selection of input voltage
- Service “Redi-Alert”

### Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>7 digit, 0.28 [7mm], LCD, 1 display</td>
</tr>
<tr>
<td>Quartz Accuracy</td>
<td>0.01%</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>12/24 VDC/±25%, 115-240 VAC 50/60 Hz/±10%</td>
</tr>
<tr>
<td>Special Voltages</td>
<td>24-48 VDC/±25%, 24 VAC 50/60 Hz/±10%</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>12-24 VDC &amp; 24-48 VDC/2-4 mA 24 VAC/VDC/2 mA 115-240 VAC/7-15 mA</td>
</tr>
<tr>
<td>Protection</td>
<td>Without reset button-IP 65, gasket supplied, with reset button-IP54</td>
</tr>
<tr>
<td>EMC</td>
<td>EN 55011, EN 50082-2</td>
</tr>
<tr>
<td>Vibration</td>
<td>1 g (10-500) IEC 68-2-34</td>
</tr>
<tr>
<td>Shock</td>
<td>30 g (18 msec.) IEC 68-2-27, 25 g (6 msec.) IEC 68-2-29</td>
</tr>
<tr>
<td>Max. Count Speed</td>
<td>30, 200Hz DC or (10 Hz AC or AC/DC)</td>
</tr>
<tr>
<td>Memory</td>
<td>EEPROM (no battery)</td>
</tr>
<tr>
<td>Approvals</td>
<td>UL Recognized, CE Compliant</td>
</tr>
<tr>
<td>Mounting</td>
<td>Retaining clip</td>
</tr>
<tr>
<td>Electrical Connection</td>
<td>1/4&quot; [6.4mm] spade or screw terminals</td>
</tr>
<tr>
<td>Case Material</td>
<td>Black, ABS plastic with glass lens on round model only</td>
</tr>
<tr>
<td>Reset</td>
<td>Manual and remote, non-reset and remote only</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-22°F to +158°F [-30°C to +70°C]</td>
</tr>
<tr>
<td>Weight</td>
<td>2 oz [57g]</td>
</tr>
<tr>
<td>Service Alert</td>
<td>Factory set - one “Redi-Alert”, 4 digits</td>
</tr>
<tr>
<td>Prewarn Signal</td>
<td>Factory set, 4 digits</td>
</tr>
</tbody>
</table>

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### Models Description

For Details on Models and Descriptions, see the Ordering Information section.

### Dimensions

#### Round

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Unit</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>1.77</td>
<td>45.0</td>
<td></td>
</tr>
<tr>
<td>1.47</td>
<td>37.3</td>
<td></td>
</tr>
<tr>
<td>0.12</td>
<td>3.0</td>
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<tr>
<td>1.89</td>
<td>48.0</td>
<td></td>
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<tr>
<td>Ø2.02</td>
<td>56.0</td>
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</table>

**Panel Cut Out:** Ø2.055 [52.2]

#### Square

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.77</td>
<td>45.0</td>
<td></td>
</tr>
<tr>
<td>1.47</td>
<td>37.3</td>
<td></td>
</tr>
<tr>
<td>0.12</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>1.89</td>
<td>48.0</td>
<td></td>
</tr>
<tr>
<td>1.77</td>
<td>45.0</td>
<td></td>
</tr>
</tbody>
</table>

**Panel Cut Out:** 1.78 [46.2] SQUARE

#### Rectangular

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.77</td>
<td>45.0</td>
<td></td>
</tr>
<tr>
<td>1.47</td>
<td>37.3</td>
<td></td>
</tr>
<tr>
<td>0.12</td>
<td>3.0</td>
<td></td>
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<tr>
<td>1.89</td>
<td>48.0</td>
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<tr>
<td>0.94</td>
<td>24.0</td>
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<tr>
<td>0.87</td>
<td>22.0</td>
<td></td>
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</tbody>
</table>

**Panel Cut Out:** 0.876 [22.2] x 1.772 [45]

#### Mounting Clip

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.97</td>
<td>49.9</td>
<td></td>
</tr>
<tr>
<td>1.83</td>
<td>46.4</td>
<td></td>
</tr>
<tr>
<td>2.11</td>
<td>53.5</td>
<td></td>
</tr>
<tr>
<td>0.17</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>0.18</td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>0.10</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>0.38</td>
<td>9.5</td>
<td></td>
</tr>
</tbody>
</table>

**Panel Cut Out:** 0.38 [9.5]

Maximum Panel Thickness for all units: 0.15" [6.4mm]

### Wiring Diagram

1. DC *-" [GND] or AC
2. Input
3. Reset
4. DC *+" or AC

### Applications

- **Test Equipment**
- **Packaging Machinery**
- **Medical Devices**
**Model 56**

**Electronic LCD Hour/Counter/Maintenance Meter**

---

**Ordering Information**

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>HOUSING DIMENSIONS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 X 2 INCH</td>
<td>2 X 2 INCH</td>
</tr>
<tr>
<td>HM WITH HM (bg)*</td>
<td>5600</td>
<td>5601</td>
</tr>
<tr>
<td>C WITH C (bg)*</td>
<td>5610</td>
<td>5611</td>
</tr>
<tr>
<td>HM WITH C (bg)*</td>
<td>5620</td>
<td>5621</td>
</tr>
<tr>
<td>C WITH HM (bg)*</td>
<td>5630</td>
<td>5631</td>
</tr>
<tr>
<td>HM WITH SHM (bg)*</td>
<td>5640</td>
<td>5641</td>
</tr>
<tr>
<td>C WITH SC (bg)*</td>
<td>5650</td>
<td>5651</td>
</tr>
<tr>
<td>SHM WITH HM (bg)*</td>
<td>5660</td>
<td>5661</td>
</tr>
<tr>
<td>SC WITH C (bg)*</td>
<td>5670</td>
<td>5671</td>
</tr>
</tbody>
</table>

*HM= Hour Meter  *C= Counter  *bg= Background  *SHM= Service Hour Meter  *SC= Service Counter

Note: The counter display is updated on the trailing edge of the input signal

---

**Model 56**

**Specification Sheet**

| Company:  | __________________________ | Phone:  | __________________________ |       |
| Address:  | __________________________ | Fax:  | __________________________ |       |
| Contact:  | __________________________ | Email:  | __________________________ |       |
| Date:     | __________________________ |       |       |       |

Model No. __________ (4 digits) SELECTED FROM ABOVE TABLE.

**Input Voltage:** (check only 1)

- 12-24 VDC
- 115-240 VAC 50/60 Hz

Special voltages available, consult factory.

**Indication of time for Hour Meter:** (check only 1)

- 1/100th
- 1/10th

**Max. counting frequency for Counter:** (check only 1)

- 30 Hz (DC)
- 200 Hz (DC)
- 10 Hz @ (AC) or (AC/DC)

**Termination:** (check only 1)

- 1/4” spade
- screw terminals

**Reset Types:** (check only 1)

- non-reset
- remote reset
- remote and manual reset (No manual reset for 2.2” Round Model)

**Service Interval:** (optional)

- “Redi-Alert” : ___________ (4 digits max)
- Prewarn : ___________ (4 digits max)
The Redington Model 57 family of LCD indicators offers a variety of options to fulfill your count/hour meter requirements. This indicator can display hours, counts or both with a single-line shared display. This model is available with an LED indication for service and relay or transistor output. You decide which value should be displayed permanently and which one will be in the background. The background indication will appear for approximately 10 seconds every time you apply power to the meter.

When using a counter and an hour meter in combination, the counter will count the number of input pulses while the hour meter will record the total duration of the input pulses.

The Redi-Alert Service Interval feature notifies operators of service requirements when service intervals are a function of the number of events or time. If a Redi-Alert Service Interval is specified, the display will show the count (or time) remaining until the service interval is reached. The Redi-Alert Service Interval feature can be considered to be a down-counter (or down-timer) since the count (or time) that is displayed shows what remains until service is required. When the Redi-Alert Service Interval gets to zero, the indicator will flash the display. If the Redi-Alert Service Interval is not reset, the indicator will continue to operate, and the display will show negative counts (or time) indicating how far the system has gone past the service interval. If the prewarn feature is included, the display will begin flashing when the prewarn count (or time) is reached. When the Service Interval is in the background, it will come to the foreground when it reaches the service interval or the prewarn. Resetting the indicator resets the Service Interval to its specified setting and returns the Service Interval to the background.

The LED indicator and output will come on once the Redi-Alert is reached and stay on until reset.

The Model 57 family also offers the option of an additional display for those applications that require dual indications.

**Features**
- Choice of single or dual displays
- Display counts/hours or both
- Factory programmed service alert
- Divide/multiply on inputs (factory set)
- With or without reset
- Output signal: none, relay or transistor
- Service indicator available
- DC input voltages
- IP 65 sealed front panel
- EEPROM for memory (no battery)

**Options**
- Count speed
- Reset type
- Indication of time/count
- Type of output
- One or two displays
- LED indication for service
- Maintenance Redi-Alert output

**Specifications**

| Display: | Large 7 digit, 0.28 [7mm], LCD |
| Quartz Accuracy: | 0.01% over entire voltage & temp. range |
| Input Voltage: | 12-24 VDC/ ±25% |
| Special Voltages: | 24 VDC/ ±25% - with relay output |
| Current Consumption: | 12-24 VDC/10 mA, 24-48 VDC/10 mA |
| Relay Contact: | 1 dry contact / breaking capacity |
| Transistor Output: | V</sub>, 4.5 VDC, minimum through 30 KW |
| Operating Temperature: | -22 °F to +158 °F [-30 °C to +70 °C] |

| Approvals: | CE Compliant |
| Protection: | IP 65 front panel/gasket supplied |
| EMC: | EN 55011, EN 50082-2 |
| Vibration: | 3g (10…500 Hz) |
| Shock: | 30 g (18 msec.) |
| Max Count Speed: | 30 or 200 Hz (specify) |
| Memory: | EEPROM (no battery) |
| Mounting: | Metal clamp |
| Electrical Connection: | 8 pole compact plug with lock |
| Case Material: | Black, ABS plastic w/glass lens |
| Reset: | Manual & remote (manual button on the rear of housing), non-reset, remote |
| Service Alert: | Factory set - one Redi-Alert, 4 digits |
| Prewarn Signal: | Factory set, 4 digits |
| Weight: | 3.5 oz [99g] |
Model 57  Electronic  LCD Hour/Counter/Maintenance Meter

Models  Description

For Details on Models and Descriptions, see the Ordering Information section.

Dimensions

Maximum Panel Thickness: 0.20" [5.1mm]
Panel Cutout: 2.06" [52.2mm]

Wiring Diagram

Applications

Panel Builders  Medical Devices  Packaging Machinery  Test Equipment
Model 57
Electronic
LCD Hour/Counter/Maintenance Meter

Ordering Information

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Voltage</th>
<th>Function</th>
<th>Reset</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5700</td>
<td>12 - 24 VDC</td>
<td>HM*</td>
<td>HM</td>
<td>without output or LED</td>
</tr>
<tr>
<td>5701</td>
<td>12 - 24 VDC</td>
<td>C</td>
<td>C</td>
<td>without output or LED</td>
</tr>
<tr>
<td>5702</td>
<td>12 - 24 VDC</td>
<td>HM with HM (bg)*</td>
<td>HM</td>
<td>without output or LED</td>
</tr>
<tr>
<td>5703</td>
<td>12 - 24 VDC</td>
<td>C with C (bg)*</td>
<td>C</td>
<td>without output or LED</td>
</tr>
<tr>
<td>5704</td>
<td>12 - 24 VDC</td>
<td>HM with C (bg)*</td>
<td>BOTH</td>
<td>without output or LED</td>
</tr>
<tr>
<td>5705</td>
<td>12 - 24 VDC</td>
<td>C with HM (bg)*</td>
<td>BOTH</td>
<td>without output or LED</td>
</tr>
<tr>
<td>5706</td>
<td>24 VDC</td>
<td>HM with SHM (bg)*</td>
<td>SHM</td>
<td>with relay output and LED</td>
</tr>
<tr>
<td>5707</td>
<td>12 - 24 VDC</td>
<td>HM with SHM (bg)*</td>
<td>SHM</td>
<td>with transistor output and LED</td>
</tr>
<tr>
<td>5708</td>
<td>24 VDC</td>
<td>C with SC (bg)*</td>
<td>SC</td>
<td>with relay output and LED</td>
</tr>
<tr>
<td>5709</td>
<td>12 - 24 VDC</td>
<td>C with SC (bg)*</td>
<td>SC</td>
<td>with transistor output and LED</td>
</tr>
<tr>
<td>5710</td>
<td>24 VDC</td>
<td>SHM with HM (bg)*</td>
<td>SHM</td>
<td>with relay output and LED</td>
</tr>
<tr>
<td>5711</td>
<td>12 - 24 VDC</td>
<td>SHM with HM (bg)*</td>
<td>SHM</td>
<td>with transistor output and LED</td>
</tr>
<tr>
<td>5712</td>
<td>24 VDC</td>
<td>SC with C (bg)*</td>
<td>SC</td>
<td>with relay output and LED</td>
</tr>
<tr>
<td>5713</td>
<td>12 - 24 VDC</td>
<td>SC with C (bg)*</td>
<td>SC</td>
<td>with transistor output and LED</td>
</tr>
</tbody>
</table>

HM= Hour Meter  C= Counter  bg= Background  SHM= Service Hour Meter  SC= Service Counter

Model 57
Specification Sheet

Company: __________________________   Phone: ____________________
Address: __________________________   Fax: ____________________
Contact: __________________________   Email: ____________________
Date: ____________________

Model No. ___________ (4 digits) SELECTED FROM ABOVE TABLE

Display 1

Indication of time for Hour Meter: (check only □)
1/100ths

Max. counting frequency for Counter: (check only □)
30 Hz
200 Hz

Reset types: (check only □)
non-reset  remote reset  remote & manual (manual reset on rear of housing)

Service interval (optional) (4 digits max)
"Redi-Alert": _____________
Prewarn: _____________

Display 2 (Optional)

□ Yes  □ No

Indication of time for Hour Meter: (check only 1)
1/10th

Max. counting frequency for Counter: (check only 1)
30 Hz  200 Hz

Reset types: (check only 1)
non-reset  remote reset  remote & manual (manual reset on rear of housing)
Model 59  
Electronic  
LCD Hour/Counter/Maintenance Meter

Description
The Redington Model 59 line of LCD modules can easily be integrated into your equipment or machinery. These functions are also available in cased versions, ask for more information, or see Model 55, 56 & 57.

Single Indicator:
Can be used to display hours or count.

Twin Indicator:
These models can supply two indications in one display. You can decide which function should be indicated permanently and which one in the background. The background function displays for approximately 10 seconds every time you power-up the display. When using a counter and an hour meter in combination, the counter will count the number of input pulses while the hour meter will record the total duration of the input pulses. Presettable “prewarn” signals can also be programmed into the modules. If you specify a prewarn the display will flash when it reaches its specified value. A wide range of reset functions are also available to provide you with the exact configuration for your application. Model 57 is available with an output function to “alert” when service or preventive maintenance should occur.

Redi-Alert:
The Redington Model 59 LCD Maintenance Meter modules can easily be integrated into your equipment or machinery. This module can display hours, counts or both with a single-line, shared display. You can decide which function should be indicated permanently and which one is in the background. The background function, value, appears for approximately 10 seconds every time you power-up the display. When using a hour meter and counter in combination, the counter will count the number of input pulses while the hour meter will record the total duration of the input pulses. A wide range of reset functions are available to provide you with the exact configuration for your application.

The Redi-Alert Service Interval feature notifies operators of service requirements when service intervals are a function of the number of events or time. If a Redi-Alert Service Interval is specified, the display will show the count (or time) remaining until the service interval is reached. The Redi-Alert Service Interval feature can be considered to be a down-counter (or down-timer) since the count (or time) that is displayed shows what remains until service is required. When the Redi-Alert Service Interval gets to zero, the indicator will flash the display. If the Redi-Alert Service Interval is not reset, the indicator will continue to operate, and the display will show negative counts (or time) indicating how far the system has gone past the service interval. If the prewarn feature is included, the display will begin flashing when the prewarn count (or time) is reached. When the Service Interval is in the background, it will come to the foreground when it reaches the service interval or the prewarn. Resetting the indicator resets the Service Interval to its specified setting and returns the Service Interval to the background. The LED indicator and output will come on once the Redi-Alert is reached and stay on until reset.

Features

<table>
<thead>
<tr>
<th>Description</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display time/count or both</td>
<td>Input frequency</td>
</tr>
<tr>
<td>“Redi-Alert” function for service</td>
<td>Remote reset</td>
</tr>
<tr>
<td>Choice of non-reset or remote reset</td>
<td>Service “Redi-Alert”</td>
</tr>
<tr>
<td>EEPROM for memory (no battery)</td>
<td>Display functions</td>
</tr>
<tr>
<td>Divider/multiplier</td>
<td></td>
</tr>
<tr>
<td>30 or 200 Hz, max input frequency</td>
<td></td>
</tr>
<tr>
<td>1/10th or 1/100th hour indication</td>
<td></td>
</tr>
<tr>
<td>12 to 24 VDC power range</td>
<td></td>
</tr>
</tbody>
</table>

Specifications

<table>
<thead>
<tr>
<th>Display: 7 digit, 0.28 [7mm], LCD</th>
<th>Mounting: Electrical connection pins for soldering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartz Accuracy: 0.01%</td>
<td>Electrical Connection: Pins for soldering</td>
</tr>
<tr>
<td>Input Voltage: 12-24 VDC/ ±25%</td>
<td>Reset: Non-reset, remote</td>
</tr>
<tr>
<td>Current Consumption: 2-4 mA</td>
<td>Protection:</td>
</tr>
<tr>
<td>Transistor Output: ( V_{OH} ) 4.5 VDC, minimum through 30 KW ( V_{UL} ) 0.4 VDC, maximum through 20 KW ( I_{SC} ) 1.0 mA, maximum</td>
<td>EMC: EN 55011, EN 50082-2</td>
</tr>
<tr>
<td>Operating Temperature: -22°F/+158°F [-30°C to +70°C]</td>
<td>Vibration: 1 g (10 to 500 Hz ) IEC 68-2-34</td>
</tr>
<tr>
<td>Max Count Speed: 30 or 200 Hz</td>
<td>Shock: 30 g (18 msec.) IEC 68-2-27</td>
</tr>
<tr>
<td>Memory: EEPROM (no battery)</td>
<td>25 g (6 msec.) IEC 68-2-29</td>
</tr>
<tr>
<td>Approvals: UL/cUL Recognized</td>
<td>Weight: 0.5 oz [14g]</td>
</tr>
<tr>
<td>Service Alert: 1 “Redi-Alert”, 4 digits, factory set</td>
<td></td>
</tr>
<tr>
<td>Prewarn Signal: Factory set, 4 digits</td>
<td></td>
</tr>
</tbody>
</table>

Models  Description

For Details on Models and Descriptions, see the Ordering Information section.
**Model 59**

Electronic LCD Hour/Counter/Maintenance Meter

**Dimensions**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C / OUT</td>
<td>0.07 [1.8]</td>
</tr>
<tr>
<td>R</td>
<td>0.24 [6.2]</td>
</tr>
<tr>
<td>0.86 [21.8]</td>
<td>1.00 [25.4]</td>
</tr>
<tr>
<td>0.12 [3.05]</td>
<td>0.12 [3.05]</td>
</tr>
<tr>
<td>0.58 [14.7]</td>
<td>0.37 [9]</td>
</tr>
<tr>
<td>0.28 [7.1]</td>
<td>1.10 [27.9]</td>
</tr>
<tr>
<td>0.55 [13.9]</td>
<td>1.48 [37.5]</td>
</tr>
<tr>
<td>1.65 [42.0]</td>
<td>0.07 [1.7]</td>
</tr>
</tbody>
</table>

**Applications**

- Test Equipment
- Panel Builders
- Medical Devices
- Office Equipment
- Flow Meters

**Ordering Information**

<table>
<thead>
<tr>
<th>Model#</th>
<th>Function</th>
<th>Output Signal</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGLE FUNCTION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5902</td>
<td>HM*</td>
<td>-</td>
<td>HM is resettable</td>
</tr>
<tr>
<td>5912</td>
<td>C*</td>
<td>-</td>
<td>C is resettable</td>
</tr>
<tr>
<td>TWO FUNCTION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5922</td>
<td>HM with HM (bg)*</td>
<td>-</td>
<td>Only HM is resettable</td>
</tr>
<tr>
<td>5932</td>
<td>C with C (bg)*</td>
<td>-</td>
<td>Only C is resettable</td>
</tr>
<tr>
<td>5942</td>
<td>HM with C (bg)*</td>
<td>-</td>
<td>Both are resettable</td>
</tr>
<tr>
<td>5952</td>
<td>C with HM (bg)*</td>
<td>-</td>
<td>Both are resettable</td>
</tr>
<tr>
<td>5962</td>
<td>HM with SHM (bg)*</td>
<td>included</td>
<td>Only SHM (bg) is resettable</td>
</tr>
<tr>
<td>5972</td>
<td>C with SC (bg)*</td>
<td>included</td>
<td>Only SC (bg) is resettable</td>
</tr>
<tr>
<td>5982</td>
<td>SHM with HM (bg)*</td>
<td>included</td>
<td>Only SHM is resettable</td>
</tr>
<tr>
<td>5992</td>
<td>SC with C (bg)*</td>
<td>included</td>
<td>Only SC is resettable</td>
</tr>
</tbody>
</table>

*HM=HOUR METER  *C= COUNTER  *bg=BACKGROUND  *SC= SERVICE COUNTER  *SHM= SERVICE HOUR METER

---

**Wiring Diagram**

NPN Transistor Output

**Model 59**

Specification Sheet

Company: __________________________ Phone: ____________________
Address: __________________________ Fax: ____________________
Contact: __________________________ Email: ____________________
Date: ______________________________

Model No. _____________ (4 digits) SELECTED FROM ABOVE TABLE.

Input voltage: (check only 1)
- 12-24 VDC Special voltages available, consult factory.

Indication of time for Hour Meter: (check only 1)
- 1/100th
- 1/10th

Max. counting frequency for Counter: (check only 1)
- 30 Hz (DC)
- 200 Hz DC

Reset type: (check only 1)
- non-reset
- remote reset

Service interval: (optional)
- “Redi-Alert”: _____________ (4 digits max)
- Prewarn: _____________ (4 digits max)
Model 63 Electronic LCD Counter

Description

The Model 63 Electronic Counter with 8 LCD digits brings more features to the user than ever before. Models are available that are simple 8-digit totalizers, while other models can bring together enough features to control a significant process.

A long list of features includes a programmable output, an external electronic reset, a front panel reset enable, and programmable alert or preset capability. In addition, the unit can be configured to operate from an external DC power supply or an internal 15+ year lithium battery. An EEPROM is available with the externally powered units to retain last data when power goes down. The front end of the Model 63 Counter utilizes a high-contrast, reflective, 8-digit LCD with 0.32 inch [8mm] digits and seven icons, while at the back end Dry Contact, Low Voltage DC, and High Voltage DC and AC Inputs are available.

The Model 63 family is designed with a rugged plastic housing that is qualified to NEMA 4/4X when properly installed in a panel using a gasket that is supplied. In addition, the unit is compliant with CE EMC standards to EN61326:2001 for industrial applications, the unit is recognized by UL for U.S. and Canadian safety standards, and it is compliant to European RoHS and WEEE standards.

Features

- Reflective LCD Display with 8 large (8mm) digits
- Choice of four counter types
  - Dual Range
  - Dual Counter
  - Up/Down Counter
  - Twin Counter
- Choice of I/O compliment that includes
  - One or two inputs
    - Switch Input (No voltage)
    - Low DC Voltage (3-30VDC)
    - High Voltage (20-300VAC or 10-300VDC)
  - Control Inputs
    - External Electronic Reset
    - Front Panel Reset Enable
  - Discrete Output
    - Open-Drain MOSFET
- Choice of external power (with EEPROM) or internal 15+ year battery
- Optional Front Panel Programming for flexible Redi-Alert or Preset Counter functionality
- Optional Redi-Alert Functions
  - 3 Redi-Alerts are available with Front Panel Programming option
  - 4 Redi-Alerts are available with Factory Programming
- Optional Preset Counter Mode
  - Available with Front Panel Programming option or with Factory Programming
- NEMA 4/4X, 12, and IP66 rated
- EMC Compliant to EN61326:2001 for industrial environments
- CE compliant, UL and cUL recognized
- European WEEE & RoHS Compliant

Capabilities

Counter Operation

Any of four different counting methods may be specified in each unit. These counting methods are factory set.

Dual Range:
In the Dual Range Mode, the counter waits for a pulse on either Input A or Input B. The first input to have a pulse is recognized and its pulses are counted. The other input is ignored until the counter is reset. The rated speed for one of the inputs is 40 Hz and for the other input it is 500 Hz. This mode is best for single up-counter operation.

Dual Counter:
In the Dual Counter Mode, the pulses on Input A are counted in two counters, Counter A and Counter B. Counter A is resettable and Counter B is not. Pressing and releasing the SEL switch swaps the counters on the display. This mode is good for maintenance applications where a total counts accumulated during operation is desired. The Dual Counter is only available with front panel programming.

Up/Down Counter:
In the Up/Down Counter Mode, the pulses on Input A are added to the accumulated count and the pulses on Input B are subtracted from the accumulated count. The Up/Down Counter is capable of displaying negative numbers.

Twin Counter:
The Twin Counter behaves as two counters in one package. The pulses on Input A are accumulated in Counter A and the pulses on Input B are accumulated in Counter B. Both counters are reset at the same time. The displayed counters can be swapped by pressing and releasing the SEL switch. The Twin Counter is only available with front panel programming.

I/O Functions

The I/O functions can be mixed and matched to maximize the functionality of the counter. There are three types of inputs that the counter can accept. The interfaces for each are factory set. The inputs can be
For the Switch and Low Voltage DC Counters, there are six screw terminals for all of the I/O. For the High Voltage Counters, there are four screw terminals for the I/O. The combinations of the I/O and power supply are factory set.

Pulse Inputs: The pulse inputs are those inputs that are counted.
Remote Reset: When the remote reset is at a high level, the counter will reset.
Front Panel Reset Enable: The counter will reset when the Front Panel Reset Enable is at a high level, and the Front Panel Reset Switch is pressed.
Output: The output is an open-drain MOSFET. The output is used when operating in the Preset Counter Mode, and it can be optionally used when using Redi-Alerts.

Preset Function
Each counter may be placed in a preset operating mode. This mode can be programmed through the front panel for those units that have the front panel programming option. It may also be factory programmed. IT IS NOT RECOMMENDED THAT THE PRESET FUNCTION BE USED AT THE SAME TIME THAT ALERTS ARE ENABLED.

Basically, a preset counter is a counter that counts to a preset value and then turns on an output device. At some point, the output device is turned off, the counter is reset, and the process begins again. There are two things to determine. One is when and how to turn off the output device, and the second is when and how to reset the counter.

The preset counters can be set up for either automatic reset or external (front panel or remote) reset. The outputs can be turned off by either time out or external reset. In addition to the output, an icon can be turned on when the output is turned on for a visual indication of the preset condition.

Alert Functions
The Model 63 Counter can be programmed to operate as a maintenance device in which alerts notify the user of certain maintenance actions to be taken after accumulation of a predefined number of counts. When the accumulated count equals the predefined alert value, an icon is illuminated on the display. When the alert is reset, the icon is turned off, but the count value is not reset.

There are two types of alerts. The first is a break-in alert. A break-in alert only occurs once at the start of unit operation. The second type of alert is recurring. A recurring alert occurs continuously at a predefined period. When tied to a break-in alert, the recurring alert will not begin its count until the break-in alert has occurred.

The intervals for the recurring alert can be performed as start-to-start or end-to-end. A start-to-start interval count starts when the last alert is turned on. The end-to-end interval count starts when the last alert is turned off.

The Model 63 Counter can support three alerts using front panel programming and four alerts when factory programmed. IT IS NOT RECOMMENDED THAT THE PRESET FUNCTION BE USED AT THE SAME TIME THAT ALERTS ARE ENABLED. In both cases, Alert #1 is a break-in alert that is tied to Alert #2, which is recurring. Alert #3 is recurring, and Alert #4 can be factory set as either break-in or recurring. If Alert #4 is break-in, then it is tied to Alert #3.

The Model 63 Counter can be programmed to be latched or kept on for a predetermined number of counts. When latched, an external reset is required to turn off the alert. Each alert can also force the output on when the alert is on.

Front Panel
The liquid crystal display is reflective with dark characters on a light background. There are 8 digits on the display. The standard display contains seven icons which can be assigned as desired to either alerts or a preset.

Model 63 Counters with the front panel programming option are capable of being programmed for either alerts or the preset function. There are two front panel switches. To begin programming, the two switches are pressed simultaneously. The programming menu must be completed in its entirety to return to normal operation. The switch functions are described as follows:

SEL: During normal operation, the displayed counters will be swapped when the SEL switch is pressed and released. During programming, this switch is used to select options.
RST: During normal operation, the RST switch is used for front panel reset. During programming, the RST switch is used to enter an option.

Resets
Unless using alerts, a reset returns the display to zero. If using alerts, the reset turns an alert off. There are three different reset configurations available:

Non-Reset: The counter can never be reset. A non-reset unit also has no front panel programming option.
Remote Reset: A model with Remote reset has a dedicated terminal for performing the reset function. The unit resets when the remote reset signal is at a high level. When the reset signal is at a low level, accumulating counts can occur.
Manual Reset: Manual reset occurs when the RST switch on the front of the counter is pressed. Counting resumes upon release of the RST switch. The exception to this operation is in the Dual Counter case in which the non-resettable counter can not be reset.

Note: Some counters are equipped with a Manual Reset Enable Input. In this case, the Manual Reset Enable Input must be high for the RST switch to be functional.
## Specifications

**Display:** Figures: 8 LCD digits 0.32” [8mm] high
Annunciators Icon: A choice of 7 Icons 0.08” [2mm] high

**Reset:** Remote, manual & non-reset. Manual reset enable is available on some models

**Speed:**
- Low speed: 0-40 counts per second (min. 12.5ms-on, 12.5ms-off)
- High speed: 0-500 counts per second (min. 1.0 ms-on, 1.0 ms-off)

**Inputs:**
- Switch (no voltage)
  - DC Voltage:
    - Absolute voltage range: -0.5 VDC, minimum to 30.0VDC, maximum
    - VIH: 3.0 VDC, maximum
    - VIL: 1.0 VDC, minimum
  - High Voltage AC/DC:
    - Absolute Maximum voltage: 300VAC/VDC
    - VIH: 10VDC/20 VAC, max.
    - VIL: 3VDC/3 VAC, minimum

**Power:**
- Internally powered models: Self powered (+15yrs lithium battery)
- Externally Powered models: 5-28 VDC, externally supplied
- Absolute Maximum external power: 30.0 VDC

**Output:**
- Format: Open-Drain MOSFET with Source connected to Common (see note 3)
- Maximum Withstanding voltage: 30VDC, reference to Common
- Maximum Load current: 0.1Amp

**EEPROM:**
- (When installed) 40 years
- Maximum data writes: 100,000

**Battery Life:**
- 15 years +

**Mounting:**
- Panel with clip

**Terminals:**
- Terminal block

**Weight:**
- 2 oz. [57g]

**Environmental:**
- Temp. (Storage & Operating):
  - -4˚F to + 140˚F [-20˚C to +60˚C]
  - Humidity: 0 to 95% RH, non-condensing
- Vibration: Operating:
  - 10 to 55 Hz, 0.01” [0.25mm] double amplitude
  - Non-operating: 10 to 55 Hz, 0.03” [0.75mm] double amplitude

**Shock:**
- Operating: 1G’s
- Non-operating: 3G’s

**Dielectric:**
- 1000 VAC 50/60Hz for 1 minute

**Accuracy:**
- 100% (provided signal meets stated parameters)

**EMC Compliance:**

**Enclosure:**
- NEMA 4/4X, 12, & IP66 compliance (from the front)
  - when properly mounted using the optional gasket

**Approvals:**
- CE compliant, UL & cUL recognized

**Environmental Compliance:**
- Compliant to the European WEEE & RoHS

### Notes

1. When interfacing the Model 63 with a Solid State Relay or AC Sensor, the leakage current needs to be considered. Contact the factory or see the application note at www.redingtoncounters.com for further information.

2. The Absolute Voltage Range and the Absolute Maximum Voltage are the voltages at which operation beyond the specified limits may result in damage to the unit.

3. Operates like open-collector NPN. Care should be taken when interfacing to this input since there is no current limiting protection in the counter.

### Dimensions

<table>
<thead>
<tr>
<th>Component</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel Cutout:</td>
<td>1.79” [45.5mm] x 0.89” [22.6mm]</td>
</tr>
<tr>
<td>Recommended Panel Thickness:</td>
<td>0.875” [22.2mm]</td>
</tr>
</tbody>
</table>

## Available Icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVC</td>
<td>SERVICE</td>
</tr>
<tr>
<td>CHG</td>
<td>CHANGE</td>
</tr>
<tr>
<td>OIL</td>
<td>OIL FILTER</td>
</tr>
<tr>
<td>AIR FILTER</td>
<td></td>
</tr>
<tr>
<td>LAMP</td>
<td></td>
</tr>
<tr>
<td>MUFFLER</td>
<td></td>
</tr>
</tbody>
</table>
Description
The Model 63 Electronic Hour Meter with 8 LCD digits brings more features to the user than ever before. Models are available that are simple Hour Meters, while other models can bring together enough features to control a significant process.

A long list of features includes a programmable output, an external electronic reset, a front panel reset enable, and programmable alert or preset capability. In addition, the unit can be configured to operate from an external DC power supply or an internal 15+ year lithium battery. An EEPROM is available with the externally powered units to retain last data when power goes down. The front end of the Model 63 Hour Meter utilizes a high-contrast, reflective, 8-digit LCD with 0.32 inch [8mm] digits and seven icons, while at the back end Dry Contact, Low Voltage DC, and High Voltage DC and AC Inputs are available.

The Model 63 family is designed with a rugged plastic housing that is qualified to NEMA 4/4X when properly installed in a panel using an optional gasket. In addition, the unit is compliant with CE EMC standards to EN61326:2001 for industrial applications, the unit is recognized by UL for U.S. and Canadian safety standards, and it is compliant to European RoHS and WEEE standards.

Features
- Reflective LCD Display with 8 large (8mm) digits
- Choice of four Hour Meter types
  - Hour Meter
  - Minute Meter
  - Seconds Meter
  - Dual hour Meter
  - Twin Hour Meter
- Choice of I/O compliment that includes
  - One or two inputs
    - Switch Input (No voltage)
    - Low DC Voltage (3-30VDC)
    - High Voltage (20-300VAC or 10-300VDC)
  - Control Inputs
    - External Electronic Reset
    - Front Panel Reset Enable
  - Discrete Output
    - Open-Drain MOSFET
- Choice of external power (with EEPROM) or internal 15+ year battery
- Optional Front Panel Programming for flexible Redi-Alert or Preset Hour Meter functionality
- Optional Redi-Alert Functions
  - 3 Redi-Alerts are available with Front Panel Programming option
  - 4 Redi-Alerts are available with Factory Programming
- Optional Preset Hour Meter Mode
  - Available with Front Panel Programming option or with Factory Programming
- NEMA 4/4X, 12, and IP66 rated
- EMC Compliant to EN61326:2001 for industrial environments
- CE compliant, UL and cUL recognized
- European WEEE & RoHS Compliant

Capabilities
Hour Meter Operation
Any of four different counting methods may be specified. These counting methods are factory set.

Hour Meter: The Hour Meter displays hours in a resolution of hours and tenths. A front panel programmable unit or a factory programmed unit can be programmed to display a resolution of 0.01 hours.

Minute Meter: The Minute Meter displays minutes to a displayed resolution of 0.1 minutes.

Seconds Meter: The Seconds Meter displays seconds to a displayed resolution of 0.1 seconds.

Dual Hour Meter: The Dual Hour Meter measures the time that Input A is at a high level in two accumulated times. One of the times can be reset, while the other cannot. The displayed times can be swapped on the display by pressing and releasing the SEL switch. The Dual Hour Meter is only available with the front panel programming option.

Twin Hour Meter: The Twin Hour Meter behaves as two Hour Meters in one package. One Hour Meter is enabled by Input A and the second is enabled by Input B. The displayed Hour Meters can be swapped by pressing and releasing the SEL switch. The Twin Hour Meter is only available with the front panel programming option.

I/O Functions
The I/O functions can be mixed and matched to maximize the functionality of the Hour Meter. There are three types of inputs that the Hour Meter can accept. The interfaces for each are factory set. The inputs can be

- Switch – open circuit or switch closure
- Low Voltage DC – Low input is less than 1VDC and High Input is 3 – 30VDC.
**Model 63**

**Electronic**

**LCD Hour Meter**

- High Voltage DC or AC – Low is less than 3VDC or 3VAC. A High Input is either 10 – 300VDC or 20-300VAC.

For the Switch and Low Voltage DC Hour Meters, there are six screw terminals for all of the I/O. For the High Voltage Hour Meters, there are four screw terminals for the I/O. The combinations of the I/O and power supply are factory set.

<table>
<thead>
<tr>
<th>Enable Inputs:</th>
<th>The enable inputs are those inputs that enable the accumulation of time.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote Reset:</td>
<td>When the remote reset is at a high level, the Hour Meter will reset.</td>
</tr>
<tr>
<td>Front Panel Reset Enable:</td>
<td>The Hour Meter will reset when the Front Panel Reset Enable is at a high level, and the Front Panel Reset Switch is pressed. The Hour Meter will not reset when the Front Panel Reset Enable is at a low level and the Front Panel Reset Switch is pressed.</td>
</tr>
<tr>
<td>Output:</td>
<td>The output is an open-drain MOSFET. The output is used when operating in the Preset Mode, and it can be optionally used when using REDI-Alerts.</td>
</tr>
</tbody>
</table>

**Preset Function**

Each Hour Meter may be placed in a preset operating mode. This mode can be programmed through the front panel for those units that have the front panel programming option. It may also be factory programmed. IT IS NOT RECOMMENDED THAT THE PRESET FUNCTION BE USED AT THE SAME TIME THAT ALERTS ARE ENABLED.

Basically, a preset Hour Meter is an Hour Meter that times to a preset value and then turns on an output device. At some point, the output device is turned off, the Hour Meter is reset, and the process begins again. There are two things to determine. One is when and how to turn off the output device, and the second is when and how to reset the Hour Meter.

The preset Hour Meters can be set up for either automatic reset or external (front panel or remote) reset. The outputs can be turned off by either time or external reset. In addition to the output, an icon can be turned on when the output is turned on for a visual indication of the preset condition.

**Alert Functions**

The Model 63 Hour Meter can be programmed to operate as a maintenance device in which alerts notify the user of certain maintenance actions to be taken after accumulation of a predefined time. When the accumulated time equals the predefined alert value, an icon is illuminated on the display. When the alert is reset, the icon is turned off, but the accumulated time is not reset.

There are two types of alerts. The first is a break-in alert. A break-in alert only occurs once at the start of unit operation. The second type of alert is recurring. A recurring alert occurs continuously at a predefined period. When tied to a break-in alert, the recurring alert will not begin its count until the break-in alert has occurred.

The intervals for the recurring alert can be performed as start-to-start or end-to-start. A start-to-start interval count starts when the last alert is turned on. The end-to-start interval count starts when the last alert is turned off. The Model 63 Hour Meter can support three alerts using front panel programming and four alerts when factory programmed. IT IS NOT RECOMMENDED THAT THE PRESET FUNCTION BE USED AT THE SAME TIME THAT ALERTS ARE ENABLED. In both cases, Alert #1 is a break-in alert that is tied to Alert #2, which is recurring. Alert #3 is recurring, and Alert #4 can be factory set as either break-in or recurring. If Alert #4 is break-in, then it is tied to Alert #3.

The Model 63 Hour Meter can be programmed to be latched or kept on for a predetermined time. When latched, an external reset is required to turn off the alert. Each alert can also force the output on when the alert is on.

**Front Panel**

The liquid crystal display is reflective with dark characters on a light background. There are 8 digits on the display. The standard display contains seven icons which can be assigned as desired to either alerts or a preset.

Model 63 Hour Meters with the front panel programming option are capable of being programmed for either alerts or the preset function. There are two front panel switches. To begin programming, the two switches are pressed simultaneously. The programming menu must be completed in its entirety to return to normal operation. The switch functions are described as follows:

| SEL: | During normal operation, the displayed Hour Meters will be swapped when the SEL switch is pressed and released. During programming, this switch is used to select options. |
| RST: | During normal operation, the RST switch is used for front panel reset. During programming, the RST switch is used to enter an option. |

**Resets**

Unless using alerts, a reset returns the display to zero. If using alerts, the reset turns an alert off. There are three different reset configurations available:

- Non-Reset: The Hour Meter can never be reset. A non-reset unit also has no front panel programming option.
- Remote Reset: A model with Remote reset has a dedicated terminal for performing the reset function. The unit resets when the remote reset signal is at a high level. When the reset signal is at a low level, accumulating time can occur.
- Manual Reset: Manual reset occurs when the RST switch on the front of the Hour Meter is pressed. Accumulating time resumes upon release of the RST switch. The exception to this operation is in the Dual Hour Meter case; the non-resettable Hour Meter can not be reset.

Note: Some Hour Meters are equipped with a Manual Reset Enable Input. In this case, the Manual Reset Enable Input must be high for the RST switch to be functional.
Model 63  
Electronic LCD Hour Meter

Specifications

Display: Figures: 8 LCD digits 0.32” [8mm] high  
Annunciators Icon: A choice of 7 Icons 0.08” [2mm] high  

Reset: Remote, manual & non-reset. Manual reset enable is available on some models  

Speed: Low speed: 0-40 counts per second (min. 12.5ms-on, 12.5ms-off)  
High speed: 0-500 counts per second (min. 1.0 ms-on, 1.0 ms-off)  

Inputs: Switch (no voltage)  
DC Voltage:  
Absolute voltage range: -0.5 VDC, minimum to 30.0VDC, maximum  
VIH: 3.0 VDC, maximum  
VIL: 1.0 VDC, minimum  
High Voltage AC/DC:  
Absolute Maximum voltage: 300VAC/VDC  
VIH: 10VDC/20 VAC, max.  
VIL: 3VDC/3 VAC, minimum  

Power: Internally powered models: Self powered (+15yrs lithium battery)  
Externally Powered models: 5-28 VDC, externally supplied  
Absolute Maximum external power: 30.0 VDC  

Output: Format: Open-Drain MOSFET with Source connected to Common (see note 3)  
Maximum Withstanding voltage: 30VDC, reference to Common  
Maximum Load current: 0.1Amp  

EEPROM: (When installed) 40 years  
Maximum data writes: 100,000  

Battery Life: 15 years+  

Mounting: Panel with clip  
Terminations: Terminal block  

Weight: 2 oz. [57g]  

Environmental: Temp. (Storage & Operating): -4°F to +140°F [-20˚C to +60˚C]  
Humidity: 0 to 95% RH, non-condensing  
Vibration:Operating: 10 to 55 Hz, 0.01” [0.25mm] double amplitude  
Non-operating: 10 to 55 Hz, 0.03” [0.75mm] double amplitude  
Shock: Operating: 10G’s  
Non-operating: 30G’s  

Dielectric:  
1000 VAC 50/60Hz for 1 minute  

Accuracy: 100% (provided signal meets stated parameters)  


Enclosure: NEMA 4/4X, 12, & IP66 compliance (from the front)  
when properly mounted using the optional gasket  

Approvals: CE compliant, UL & cUL recognized  

Environmental Compliance: Compliant to the European WEEE & RoHS  

Notes  
1. When interfacing the Model 63 with a Solid State Relay or AC Sensor, the leakage current needs to be considered. Contact the factory or see the application note at www.redingtoncounters.com for further information.  
2. The Absolute Voltage Range and the Absolute Maximum Voltage are the voltages at which operation beyond the specified limits may result in damage to the unit.  
3. Operates like open-collector NPN. Care should be taken when interfacing to this input since there is no current limiting protection.  

Dimensions  

Panel Cutout: 1.79” [45.5mm] x 0.89” [22.6mm]  
Recommended Panel Thickness: 0.875” [22.2mm]  

Available Icons  

SVC SERVICE  
CHG CHANGE  
OIL FILTER  
AIR FILTER  
MUFFLER  

www.redingtoncounters.com
# Model 63 Electronic LCD Rate Indicator

## Description

For those requiring either tachometer (RPM) functions or frequency measurement in Hz, the Model 63 LCD Rate Indicators offer the user the solution. With a 5-digit LCD display, and front panel programmability, the Model 63 is flexible for use in many applications, and it is capable of interfacing to Dry Contact, Low Voltage DC, and High Voltage AC/DC inputs.

Capable of measuring up to 30,000 RPM the Tachometer is capable of being programmed for use with one- or two- cycle engines. The Frequency indicator is capable of measurements up to 500 Hz, making it perfect for 50, 60, and 400 Hz applications.

## Features

- Tachometer measures up to 30,000 RPM
- Frequency measurements for 50, 60, and 400 Hz applications
- Choice of external power or 15+ year internal lithium battery
- Choice of Switch (no voltage), 3-30VDC, 20-300VAC, and 10-300VDC inputs
- Programmable scale factors for interfacing with one- and two-cycle engines
- Open-drain MOSFET output

## Specifications

### Display

- Figures: 5 reflective LCD digits 0.32" [8mm] high

### Inputs

- Switch (no voltage)
  - DC Voltage
    - Absolute voltage range: -0.5 VDC, minimum to 30.0VDC, maximum
    - VIH: 3.0 VDC, maximum
    - VIL: 1.0 VDC, minimum
  - High Voltage AC/DC:
    - Absolute Maximum voltage: 300VAC/VDC
    - VIH: 10VDC/20 VAC, max.
    - VIL: 3VDC/3 VAC, minimum
- Scale Factors: 0.5 pulses per revolution, 1 pulse per revolution, and 2 pulses per revolution. Units can be factory or user programmed by optional front panel switches.
- Accuracy: Resolution Dependent, better than 1% for inputs greater than 700RPM or 12 Hz.
- Power: Internally powered models: Self powered (15+yr battery) Externally Powered models: 5-28 VDC, externally supplied Absolute Maximum external power: 30.0 VDC
- Output: Format: Open-Drain MOSFET with Source connected to Common (see note 3)
  - Maximum Withstanding voltage: 30VDC, reference to Common Maximum Load current: 0.1Amp
- EEPROM: (When installed) 40 years, externally powered
  - Maximum data writes: 100,000

### Mounting

- Panel with clip

### Terminations

- Terminal block

### Weight

- 2 oz. [57g]

### Environmental

- Temp. (Storage & Operating): -4˚F to + 140˚F [-20˚C to +60˚C]
- Humidity: 0 to 95% RH, non-condensing

### Vibration

- Operating: 10 to 55 Hz, 0.01” [0.25mm] double amplitude
- Non-operating: 10 to 55 Hz, 0.03” [0.75mm] double amplitude

### Shock

- Operating: 10G's
- Non-operating: 30G's

### Dielectric

- 1000 VAC 50/60Hz for 1 minute

### Accuracy

- 100% (provided signal meets stated parameters)

### EMC Compliance


### Enclosure

- NEMA 4/4X, 12, & IP66 compliance (from the front) when properly mounted using the optional gasket

### Approvals

- CE compliant, UL & cUL recognized

### Environmental Compliance

- Compliant to the European WEEE & RoHS Directives
**Model 63**

**Electronic LCD Rate Indicator**

### Rate Indicator Types

**Tachometer:** Displayed resolution is one RPM. The maximum rate that the unit can measure is 30,000 RPM. The unit can also be programmed to vary the "scale factor" for the tachometer input to RPM's for one and two-stroke engines.

**Frequency Meter:** The Model 63 can measure frequency from 0-500 Hz, making it ideal for 50, 60 and 400 Hz applications.

### Functions

**Front Panel Switch Functions:** Front panel switches can be used for reset, display selection and programming.

- **SEL:** The background function is displayed while this switch is pressed and held during normal operation. During programming, this switch is used to select options.

- **RST:** This is the reset switch during normal operation, during programming the RST switch is used to enter an option.

**Unit Programming:** Units with front panel switches can be field programmed for a scale factor that can be programmed to comply with one and two-stroke engines.

### Dimensions

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.76</td>
<td>[44.7]</td>
</tr>
<tr>
<td>1.86</td>
<td>[47.3]</td>
</tr>
</tbody>
</table>

**Panel Cutout:** 1.79” [45.5mm] x 0.89” [22.6mm]

**Recommended Panel Thickness:** 0.875” [22.2mm]

### Notes

1. When interfacing the Model 63 with a Solid State Relay or AC Sensor, the leakage current needs to be considered. Contact the factory or see the application note at www.redingtoncounters.com for further information.

2. The Absolute Voltage Range and the Absolute Maximum Voltage are the voltages at which operation beyond the specified limits may result in damage to the unit.

3. Operates like open-collector NPN. Care should be taken when interfacing to this input since there is no current limiting protection in the counter.

### Applications

- **Motor/Pulley Speed**
- **Rate Indication**
- **Speed Control**
The 83 Counter features a 7 segment, 2 lines by 6-digit backlit LCD display. The main display line is red and shows the count value or the batch/total value when preset 3 or output 3 is viewed in the secondary display. The smaller secondary display line is green and can be used to view the prescaler value, preset values, output count values or batch/total count values (batch model only).

The 83 Counter offers a choice of nine programmable counting modes for use in applications requiring bidirectional, anti-coincidence, and quadrature counting. The unit may be programmed to detect counts on both edges of the input signal resulting in a doubling of frequency. DIP switches are used for input configuration setup and to provide a program disable function.

Four front panel push buttons are used for ease of programming the operating modes and data values, to change the viewed display, and performing user programmable functions, e.g. reset, etc. The 83 Counter can be configured for one of two numeric date entry methods.

Digital - The digital entry allows for the selection and incrementing of digits individually.

Automatic Scrolling - This method allows for the progressive change of one through all digits positions by pressing and holding the up or down button.

Protection of data value and unit configuration - The program disable DIP switch, a user-programmable code value, and an external user input selected for program disable can be utilized to provide multilevel protection.

The standard with dual presets is available with solid-state and relay outputs. The batch counter has relay outputs for output 2 and the batch/total output 3, with output 1 available as solid-state. For all 83 Counters, the solid-state outputs are available in a choice of NPN current sinking or PNP current sourcing, open-collector transistor outputs. All relay output boards are field replaceable.

Prescaler output is available as a dual preset, with solid-state outputs. The prescaler output is useful for providing a lower frequency scaled pulse train to a PLC or another external totalizer. The prescaler output provides a programmable width for every count or every 10 counts registered on the display.

RS485 communications - optional serial communication capability allows for interrogation and modification of the preset, count and prescaler values.

Construction - The unit is made of lightweight, high impact plastic with a textured front panel and a clear display window. The front panel meets NEMA4X/IP65 specifications when properly installed. Multiple units can be stacked horizontally or vertically. SMT, extensive testing, plus high immunity to noise interference make the 83 Counter extremely reliable in industrial environments.
**Model 83**

**Electronic LCD Predetermining Counter**

**Display:** 2 line by 6 digits LCD display, negative image transmissive with RED (top line) and GREEN (bottom line) backlighting. Positive image reflective display units are non-stock available.

**Main:** 0.3" (7.6mm) high digits

**Secondary:** 0.2" (5mm) high digits

**Annunciators:**
- Value: PRS, 1,2 and 3
- Output: 01, 02 and 03

**POWER REQUIREMENTS:**

**AC Versions**
- **AC Power:** 85 to 250 VAC, 50/60Hz, 9VA max.
- **DC Power:** 11 to 14 VDC @ 159 mA max.

**DC Versions**
- **AC Power:** 85 to 250 VAC, 50/60Hz, 9VA max.
- **DC Power:** 18 to 36 VDC: 5.5 W max.

**Note:** The 10% tolerance range on AC input voltage must be strictly adhered to **DO NOT EXCEED 26.4 VAC.**

**PEAK (START-UP CURRENT)**

**AC or DC Power:** 500mA peak start-up current for 10 msec. max.

**DC OUT SCR IN-terminal 10**

For units that do not have PNP current sourcing outputs, this terminal provides a DC output for sensor power +12 VDC (+/- 15%). The maximum sensor current is 100mA.

For units with PNP current sourcing outputs this terminal serves a dual purpose depending on the application PNP output voltage level and current requirements.

1. The terminal may be used as a +12 VDC output for sensor power. In this case, the PNP output voltage level will be +12 VDC (+/-15%). A maximum of 100 mA is available for the combination of sensor and PNP output sourcing current.

2. If a higher PNP output voltage level or additional output sourcing current is needed, an external DC supply may be connected between the “DC OUT ( V SRC IN)” and “COMM.” terminals. This supply will determine the PNP output voltage level, and must be in the same range of +13 to +30 VDC. An external DC supply can also provide the additional output sourcing current required in applications where two or more PNP outputs are "ON" simultaneously. However, the maximum current range of 100mA per individual output must not be exceeded, regardless of external supply capacity.

**3. Memory:** Nonvolatile FRAM retains all program parameters and count values.

**4. SENSOR POWER:** + 12 VDC (+/- 15%) @ 100mA max.

**5. COUNT INPUTS A & B:** Accepts count pulses from a variety of sources, DIP switch selectable.

- **Current Sourcing:** (active high): \( V_{IR\text{max}} = 3.9\, \text{ohm pull-down} \) to 30 VDC.
- **Current Sinking:** (active low): \( 7.8\, \text{K ohm pull-up to 12 VDC} : \) \( I_{SNK} = 1.8\, \text{mA max.} \)

**Debounce:** 50 Hz

**Lo Bias:** \( V_L = 1.5 \, \text{VDC max.,} \) \( V_{IL} = 3.75 \, \text{VDC min.} \)

**Hi Bias:** \( V_H = 5.5 \, \text{VDC max.,} \) \( V_{IH} = 7.5 \, \text{VDC min.} \)

**6. MAX. COUNT RATE:** Model dependent. All listed values are in Khz. Note: Max. count rates for X2 & X4 modes are given for 50% duty cycle signals and quad signals with 90° phase shift.

### Single Preset Model 8301

<table>
<thead>
<tr>
<th>Prescaler Value</th>
<th>C1-Usr</th>
<th>C2-usr</th>
<th>*Ad-sub</th>
<th>QUAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00001-0.99999</td>
<td>8.4</td>
<td>4.1</td>
<td>8.6</td>
<td>4.5</td>
</tr>
<tr>
<td>1.00000</td>
<td>12.0</td>
<td>5.9</td>
<td>12.4</td>
<td>6.5</td>
</tr>
<tr>
<td>1.00001-2</td>
<td>6.6</td>
<td>3.2</td>
<td>6.8</td>
<td>4.3</td>
</tr>
<tr>
<td>2.00000-3</td>
<td>5.3</td>
<td>2.6</td>
<td>5.6</td>
<td>3.7</td>
</tr>
<tr>
<td>3.00001-4</td>
<td>4.3</td>
<td>2.1</td>
<td>4.6</td>
<td>3.3</td>
</tr>
<tr>
<td>4.00001-5</td>
<td>3.6</td>
<td>1.8</td>
<td>3.8</td>
<td>2.7</td>
</tr>
<tr>
<td>5.00001-6</td>
<td>3.1</td>
<td>1.5</td>
<td>3.4</td>
<td>2.4</td>
</tr>
<tr>
<td>6.00001-7</td>
<td>2.8</td>
<td>1.4</td>
<td>3.2</td>
<td>2.1</td>
</tr>
<tr>
<td>7.00001-8</td>
<td>2.6</td>
<td>1.3</td>
<td>2.8</td>
<td>1.9</td>
</tr>
<tr>
<td>8.00001-9</td>
<td>2.3</td>
<td>1.1</td>
<td>2.4</td>
<td>1.8</td>
</tr>
<tr>
<td>9.00001-9.99999</td>
<td>2.1</td>
<td>1.0</td>
<td>2.3</td>
<td>1.7</td>
</tr>
</tbody>
</table>

### Dual Preset Model 8302

With Counter 2 configured as a Batch Counter (C2 A5n = bAtch)

<table>
<thead>
<tr>
<th>Prescaler Value</th>
<th>C1-Usr</th>
<th>C2-usr</th>
<th>*Ad-sub</th>
<th>QUAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00001-0.99999</td>
<td>8.3</td>
<td>4.1</td>
<td>8.6</td>
<td>4.5</td>
</tr>
<tr>
<td>1.00000</td>
<td>11.5</td>
<td>5.7</td>
<td>11.5</td>
<td>6.0</td>
</tr>
<tr>
<td>1.00001-2</td>
<td>6.5</td>
<td>3.2</td>
<td>6.6</td>
<td>4.3</td>
</tr>
<tr>
<td>2.00000-3</td>
<td>5.0</td>
<td>2.4</td>
<td>5.2</td>
<td>3.4</td>
</tr>
<tr>
<td>3.00001-4</td>
<td>4.1</td>
<td>2.0</td>
<td>4.4</td>
<td>2.8</td>
</tr>
<tr>
<td>4.00001-5</td>
<td>3.4</td>
<td>1.7</td>
<td>3.8</td>
<td>2.5</td>
</tr>
<tr>
<td>5.00001-6</td>
<td>2.9</td>
<td>1.4</td>
<td>3.2</td>
<td>2.2</td>
</tr>
<tr>
<td>6.00001-7</td>
<td>2.7</td>
<td>1.3</td>
<td>2.8</td>
<td>2.0</td>
</tr>
<tr>
<td>7.00001-8</td>
<td>2.2</td>
<td>1.1</td>
<td>2.4</td>
<td>1.8</td>
</tr>
<tr>
<td>8.00001-9</td>
<td>2.2</td>
<td>0.9</td>
<td>2.3</td>
<td>1.6</td>
</tr>
<tr>
<td>9.00001-9.99999</td>
<td>1.9</td>
<td>0.9</td>
<td>2.0</td>
<td>1.5</td>
</tr>
</tbody>
</table>

### Batch Model 8303

With Counter 2 configured as a Total Counter (C2 A5n = totAL)

<table>
<thead>
<tr>
<th>Prescaler Value</th>
<th>C1-Usr</th>
<th>C2-usr</th>
<th>*Ad-sub</th>
<th>QUAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00001-0.99999</td>
<td>8.5</td>
<td>3.3</td>
<td>6.6</td>
<td>3.5</td>
</tr>
<tr>
<td>1.00000</td>
<td>8.3</td>
<td>3.6</td>
<td>8.6</td>
<td>4.0</td>
</tr>
</tbody>
</table>

### Prescaler Output Model 8304

<table>
<thead>
<tr>
<th>Prescaler Value</th>
<th>C1-Usr</th>
<th>C2-usr</th>
<th>*Ad-sub</th>
<th>QUAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00001-0.99999</td>
<td>6.2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>1.00000</td>
<td>8.0</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

* Inputs A & B rates summed.
Model 83 | Electronic LCD Predetermining Counter

7. USER INPUTS: Configurable as current sinking (active low), or current sourcing (active high) inputs via a single plug jumper.

Current Sinking: active low: \( V_{IL} = 1.5 \text{ VDC max.} 22 \text{ K ohm pull-ups to 5 VDC} \)

Current Sourcing: active high: \( V_{IH} = 3.5 \text{ min.} V_{IN} \text{ max.} = 30 \text{ VDC; 22K ohm pull-down.} \)

Response Time: 10 m sec. max.

Inhibit Response Time: 250 microsec max.

8. OUTPUTS: (Output type and quantity model dependent)

Solid-State:

NPN Open Collector: \( I_{SNK} = 100 \text{mA max.} \) \( V_{OL} = 1.1 \text{ VDC max.} \)

PNP Open Collector: \( I_{SRC} = 100 \text{mA max.} \) \( V_{OH} = 12 \text{ VDC} +\text{-15\%} \) (using internal supply); \( V_{OH} = 13 \text{ to 30 VDC} \) (using external supply).

Note: The internal supply of the 83 counter can provide a total of 100 mA for the combination of sensor current and PNP output sourcing current. The supply voltage is +12 VDC (+/-15\%), which will be the PNP output voltage level when using only the internal supply.

If additional PNP output sourcing current or a higher output voltage level is desired, an external DC supply may be connected between the “DC Out/In” and “Comm” terminals. This supply will determine the PNP output voltage level, and must be in range of +13 to 30 VDC.

An external supply can provide the additional output sourcing current required in applications where two or more outputs are used simultaneously. However, the maximum rating of 100mA per individual output must not be exceeded, regardless of external supply capacity.

Relay: Form A contact, rating = 5 A @ 250 VAC, 30 VDC (resistive load), 1/10 HP @ 120 VAC (inductive load).

Relay Life Expectancy: 100,000 cycles min. at max. load rating.

Programmable Timed Output: User selectable output time resolutions.

0.01 Second Resolution: 0.01 to 99.99 sec, +/0.01% +20 m sec max. (Prescalers less than 2)

0.1 Second Resolution: 0.1 to 999.9 sec, +/0.01 + 100 m sec max. (Prescalers less than 2)

9. RS485 SERIAL COMMUNICATIONS (Optional): Up to 32 units can be connected.

Baud Rate: Programmable from 1200 to 9600 baud.

Address: Programmable from 0 to 99.

Data Format: 10 Bit Frame, 1 start bit, 7 or 8 data bits, 1 or no Parity bit, and 1 stop bit.

Parity: Programmable for Odd (7 data bits), Even (7 data bits) or None (8 data bits).

10. CERTIFICATIONS AND COMPLIANCES:

UL Recognized Component, File # E195514

Recognized to U.S. and Canadian requirements under the Component Recognition Program of Underwriters Laboratories, Inc.

CE Compliant:

ELECTROMAGNETIC COMPATIBILITY

Immunity to EN 50082-2
electrostatic discharge EN 61000-4-2
electromagnetic RF fields EN 61000-4-3
fast transients EN 61000-4-4
RF conducted interference EN 61000-4-6
simulation of cordless phone EN V02204

Emissions to EN 50081-2
RF interference EN 55011 enclosure class A

11. ENVIRONMENTAL CONDITIONS:

Operating Temperature: +32°F to +122°F [0°C TO +50°C]

Storage Temperature: -40°F to +158°F [-40°C to +70°C]

Operating and Storage Humidity: 85% max. relative humidity (non-condensing) from +32°F to +122°F [0°C to +50°C]

Altitude: Up to 6500 Feet [1981 Meters]

12. ELECTRICAL CONNECTIONS:

Wire clamping screw terminals.

13. CONSTRUCTION:

Black plastic case with collar style panel latch.

The panel latch can be installed for horizontal or vertical stacking. Black plastic textured bezel can be removed from the case without removing the case from the panel or disconnecting the wiring. Front panel meets NEMA4X/IP65 requirements for indoor use, when properly installed. Installation Category II, Pollution Degree 2.

14. WEIGHT: 6.0 oz [170g]

SINGLE PRESET MODELS

The 8301 has a solid-state output that operates in parallel with a relay output. The solid-state output is available as an NPN or PNP open collector transistor.

DUAL PRESET MODELS

The 8302 has two outputs that are activated from presets 1 and 2. These outputs can be relay or solid-state outputs. The solid-state outputs are available as NPN or PNP open-collector transistors. Units with solid-state outputs can be ordered with an optional prescaler output.

3 PRESET BATCH MODELS

The 8303 has a secondary counter that can be used for batch counting, or to keep a total count. This second counter can be programmed to operate in one of eight operating modes. Output 1 and 2 are assigned to the primary process counter (C1). Output 3 is assigned to the secondary Batch/Total counter (C2). The three preset batch unit can be ordered with solid-state or relay outputs. Units with solid-state outputs have a User Input 2 terminal available. The relay model has a relay output for Output 2 and Output 3 (Batch/Total). Output 1 is available only as solid-state.

PRESSCALER OUTPUT MODELS

The 8304 is a dual preset counter with solid-state outputs. These models have an additional output configured as a prescaler output. Each time the least significant digit of the display increments, the prescaler output provides a pulse. The width of this pulse is variable in that the output will turn off after a programmed number of count input pulses has occurred (1-9). The Prescaler output can also be programmed to activate when the 10’s digit of the display increments, rather than the least significant digit.

Note: Prescaler Output Models are limited to two programmable count modes and prescaler values of 1.00000 or less. See Count Input Modes for available modes.

FRONT PANEL KEYPAD

- Performs user Programmed Function.
- Cycles through secondary displays.
- Enters Programming Mode or Protected Value Menu when pushed and held for 2 seconds.
- Scrolls through programming displays.
- Enters Data Values.
- Selects next available mode in programming mode.
- Increments digit in digit Entry mode.
- Increments value in Auto Scrolling entry mode.
- Selects Digit to right when in Digit Entry mode.
- Decrements value in Auto Scrolling entry mode.
Model 83

Electronic LCD Predetermining Counter

Models Description

For Details on Models and Descriptions, see the Ordering Information section

Dimensions

MULTIPLE UNIT STACKING

The Model 83 is designed for close spacing of multiple units. Units can be stacked either horizontally or vertically. For vertical stacking, install the panel latch with screws to the sides of the unit. For horizontal stacking, the panel latch screws should be at the top and bottom of the unit. The minimum spacing from center line to center line of the units is 1.96" (49.8 mm). This spacing is the same for vertical or horizontal stacking.

Note: When stacking units, provide adequate panel ventilation to ensure that the maximum operating temperature range is not exceeded.

Applications

Convert-

Batching

Cut-to-length

Packaging
### Ordering Information

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
<th>NPN O.C. OUTPUT(S)</th>
<th>*PNP O.C. OUTPUT(S)</th>
<th>RELAY OUTPUT(S)</th>
<th>RS485</th>
<th>PART NUMBERS FOR AVAILABLE SUPPLY VOLTAGES</th>
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<tbody>
<tr>
<td>8301</td>
<td>1 Preset Counter Backlit LCD</td>
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<td>18-36 VDC/24 VAC</td>
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<td>No</td>
<td>No</td>
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<td>No</td>
<td>No</td>
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<td>No</td>
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<td>8303-0100 8303-1100</td>
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<td>3 Preset Batch Counter Backlit LCD</td>
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<td>No</td>
<td>No</td>
<td>Yes</td>
<td>8303-0101 8303-1101</td>
</tr>
</tbody>
</table>

* PNP outputs are non-stock items
* Items in bold are normally in factory stock.

**Note:** On batch Relay Models, Outputs 2 and 3 are relays, and Output 1 (01) is a solid-state output.

### RELAY OUTPUT BOARDS

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>NPN O.C.</th>
<th>* PNP O.C.</th>
<th>RELAY</th>
<th>PART NUMBER</th>
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<tbody>
<tr>
<td>Single Preset</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>1726-044S</td>
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<tr>
<td>Dual Preset</td>
<td>No</td>
<td>No</td>
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<td>1726-045S</td>
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<tr>
<td>Batch</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>1726-046S</td>
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</table>
Description

The Model 83 Timer is available in single or dual preset models. The 83 Timer features a 7 segment, 2 lines by 6-digit backlit LCD display. The main display line is red and shows the timer value. The smaller secondary display line is green and can be used to view the preset values or output time values.

The 83 Timer can be configured for a variety of different operating modes to meet most timing application requirements. Twelve timing ranges are available from thousands of a second to hours and minutes. Decimal points are used to separate the time units (hours, minutes, seconds). Timing can be cumulative or can reset and start upon each power cycle. “on delay” or “off delay”, “single shot”, “repetitive auto cycling” modes are all supported.

The 83 Timer can also be configured to continue or stop timing upon reaching preset. The display can be programmed to stop at the preset value (reset to zero mode) or zero (reset to preset mode), or automatically reset to zero or preset and hold. Once stopped, the timer can be restarted by manually resetting it, or it can be programmed to restart when power is reapplied. The 83 Timer has a run/stop input, 3 programmable user inputs, and a programmable front panel function key. The run/stop and user inputs can be configured as sinking (active low) or sourcing (active high) inputs via a single plug jumper. The user inputs and the front panel function key can be configured to provide a variety of functions.

Four front panel push-buttons are used for ease of programming the operating modes and data values, changing the viewed display, and performing user programmable functions, e.g. reset, etc. The 83 Timer can be configured for one of two numeric data entry methods digit or automatic scrolling.

Digital - The digital entry allows for the selection and incrementing of digits individually.

Automatic scrolling - This method allows for the progressive change of one through all digits positions by pressing and holding the up or down button.

The dual preset models are available with solid-state or relay outputs. The single preset model has a solid-state and relay output in parallel. All solid-state outputs are available in a choice of NPN current sinking or PNP current sourcing, open-collector transistor outputs. All relay output boards are field replaceable.

RS485 communications - optional serial communication capability allows for interrogation and modification of the preset, and timer values.

Construction- The unit is made of lightweight, high impact plastic with a textured front panel and a clear display window. The front panel meets NEMA4X/IP65 specifications when properly installed. Multiple units can be stacked horizontally or vertically. SMT, extensive testing, plus high immunity to noise interference make the 83 Timer extremely reliable in industrial environments.

Features

- Displays values to (999999)
- 12 timing ranges
- Field replaceable relay output boards
- Solid state and relay output models
- NEMA4X/IP65 sealed bezel
- Status indicators for outputs
- Security via programmable operator access privileges and protected values menu
- Programmable user inputs and front panel function key
- Horizontal or vertical stacking of multiple units
- 85 to 250VAC or 18 to 36VDC/24 VAC power units
- RS485 communications option
- Choice of numeric data entry modes

Options

- Output type
- Serial communications
- Voltage input
- Display color
- Number of presets
Specifications

### Display:
- 2 line by 6 digits LCD display, negative image transmissive with RED (top line) and GREEN (bottom line) backlighting. Positive image reflective display units are non-stock available.

### Main:
- 0.3" (7.6mm) high digits
- 0.2" (5mm) high digits

### Annunciators:
- Value: PRS, 1, and 2
- Output: 01 and 02

### POWER REQUIREMENTS:

#### AC Versions
- **AC Power:** 85 to 250 VAC, 50/60Hz, 9VA max.
- **DC Power:** 11 to 14 VDC @ 159 mA max. (Non PNP output models)

#### DC Versions
- **DC Power:** 18 to 36 VDC; 5.5 W max.
- **AC Power:** 24 VAC +/– 10%; 50/60 Hz; 7VA max.

**Note:** The 10% tolerance range on AC input voltage must be strictly adhered to, DO NOT EXCEED 26.4 VAC

### PEAK (START-UP CURRENT)
- **AC or DC Power:** 500mA peak-start current for 10 msec. max.

### DC OUT/VSRC IN-terminal 10
- For units that do not have PNP current sourcing outputs, this terminal provides a DC output for sensor power (+12 VDC +/-15%).
- The maximum sensor current is 100mA. For units with PNP current sourcing outputs this terminal serves a dual purpose depending on the application.

1. The terminal may be used as a +12 VDC output for sensor power. In this case, the PNP output voltage level will be +12 VDC (+/–15%). A maximum of 100 mA is available for the combination of sensor and PNP output sourcing current.

2. If a higher PNP output voltage level or additional output sourcing current is needed, an external DC supply may be connected between the “DC Out/In” and “Comm” terminals. This supply will determine the PNP output voltage level, and must be in range of +13 to 30 VDC.

### 6. TIME ACCURACY:
- +/- 0.01%

### 7. OUTPUTS:
- **(Output type and quantity model dependent)**
  - **Solid-State:**
    - **NPN Open Collector:**
      - \(I_{SNK} = 100\text{mA max.} \; @ \; V_{OL} = 1.1 \text{ VDC max.}\
      - \(V_{OH} = 30 \text{ VDC max.}\
    - **PNP Open Collector:**
      - \(I_{SRC} = 100\text{mA max.} \; (\text{See note}) \; V_{OH} = 12 \text{ VDC +/-15% (using internal supply); } V_{OL} = 13 \text{ to 30 VDC (using external supply).}\
      - **Note:** The internal supply of the 83 Timer can provide a total of 100 mA for the combination of sensor current and PNP output sourcing current. The supply voltage is +12 VDC (+/-5%), which will be the PNP output voltage level when using only the internal supply.
      - If additional PNP output sourcing current or a higher output voltage level is desired, an external DC supply may be connected between the “DC Out/In” and “Comm” terminals. This supply will determine the PNP output voltage level, and must be in range of +13 to 30 VDC.
      - An external supply can provide the additional output sourcing current required in applications where two or more outputs are “ON” simultaneously. However, the maximum rating of 100mA per individual output must not be exceeded, regardless of external supply capacity.

### 8. RS485 SERIAL COMMUNICATIONS (Optional):
- Up to 32 units can be connected.
- **Baud Rate:** Programmable from 1200 to 9600 baud.
- **Address:** Programmable from 0 to 99
- **Data Format:** 10 Bit Frame, 1 start bit , 7 or 8 data bits, 1 or no Parity bit, and 1 stop bit.
- **Parity:** Programmable for Odd (7 data bits), Even ( 7 data bits) or None ( 8 data bits).

### 9. CERTIFICATIONS AND COMPLIANCES:
- **UL Recognized Component, File # E195514**
- Recognized to U.S. and Canadian requirements under the Component Recognition Program of Underwriters Laboratories, Inc.

### CE COMPLIANT:
- **ELECTROMAGNETIC COMPATIBILITY**
  - **Immunity to EN 50082-2**
    - electrostatic discharge EN 61000-4-2
    - electromagnetic RF fields EN 61000-4-3
    - fast transients EN 61000-4-4
    - RF conducted interference EN 61000-4-6
  - **Simulation of cordless phone** ENV50204

### Emissions to EN 50081-2
- RF interference EN 55011 enclosure class A

### 10. ENVIRONMENTAL CONDITIONS:
- **Operating Temperature:** +32°F to +122°F [0°C to +50°C]
- **Storage Temperature:** -40°F to +158°F [-40°C to +70°C]
Model 83

Operating and Storage Humidity:
85% max. relative humidity (non-condensing) from
+32°F to +122°F [0°C to +50°C]
Altitude: Up to 6500 Feet

11. ELECTRICAL CONNECTIONS:
Wire clamping screw terminals.

12. CONSTRUCTION:
Black plastic case with collar style panel latch. The panel latch can be installed for horizontal or vertical stacking. Black plastic textured bezel can be removed from the case without removing the case from the panel or disconnecting the wiring. Front panel meets NEMA4X/IP65 requirements for indoor use, when properly installed. Installation Category II, Pollution Degree 2.

13. WEIGHT: 6.0 oz [170g]

SINGLE PRESET MODELS
The 8321 Timer offers a choice of twelve timing ranges with eighteen different operating modes. The unit has a solid-state output that operates in parallel with a relay output. The solid-state output is available as an NPN or PNP open collector transistor.

DUAL PRESET MODELS
The 8322 Timer offers a choice of twelve timing ranges with 44 operating modes. The unit is available with solid-state or relay outputs. The solid-state outputs are available as NPN or PNP open collector transistors.

Models Description

For Details on Models and Descriptions, see the Ordering Information section

Dimensions

The Model 83 is designed for close spacing of multiple units. Units can be stacked either horizontally or vertically. For vertical stacking, install the panel latch with screws to the sides of the unit. For horizontal stacking, the panel latch screws should be at the top and bottom of the unit. The minimum spacing from center line to center line of the units is 1.96” (49.8 mm). This spacing is the same for vertical or horizontal stacking.

Note: When stacking units, provide adequate panel ventilation to ensure that the maximum operating temperature range is not exceeded.

Applications

Mixing
Volumetric measurement
Batch Control

www.redingtoncounters.com
### Ordering Information

<table>
<thead>
<tr>
<th>MODEL NO.</th>
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<th>NPN O.C. OUTPUT(S)</th>
<th>* PNP O.C. OUTPUT(S)</th>
<th>RELAY OUTPUT(S)</th>
<th>RS485</th>
<th>PART NUMBERS FOR AVAILABLE SUPPLY VOLTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>8321</td>
<td>1 Preset Timer Backlit LCD</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>18-36 VDC/24 VAC, 85 TO 250 VAC</td>
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<td>8322</td>
<td>2 Preset Timer Backlit LCD</td>
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<td>No</td>
<td>Yes</td>
<td>No</td>
<td>8322-0010</td>
</tr>
<tr>
<td></td>
<td>2 Preset Timer Backlit LCD</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>8322-0100</td>
</tr>
<tr>
<td></td>
<td>2 Preset Timer Backlit LCD</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>8322-0100</td>
</tr>
</tbody>
</table>

* PNP Outputs are non-stock items
* Items in bold are normally in factory stock.

### RELAY OUTPUT BOARDS

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<th>* PNP O.C.</th>
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<tr>
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<td>No</td>
<td>Yes</td>
<td>1726-044S</td>
</tr>
<tr>
<td>Dual Preset</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>1726-045S</td>
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<tr>
<td>3 Preset</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>1726-046S</td>
</tr>
</tbody>
</table>

* PNP Outputs are non-stock items
Model 88 Electronic LCD Programmable Indicator/Controller

Description

The Model 88 is a family of LCD Indicators/Controllers, with eight 7-segment digits that are 0.35" [9mm] in height. The standard display is a backlit LCD, providing red characters on a dark background. An optional reflective LCD with dark characters on a light background is available. Unit programming is accomplished using four front-panel switches, or programming can be done using the optional serial data interface and dedicated PC-based software (Redi-Ware), which is available from Redington free of charge. Upon power up, the Indicator/Controller performs internal diagnostics and flashes all segments of the display “ON” and “OFF” several times. The Indicator/Controller then configures itself per previous programming, loads the internal Counters and Timers with their values prior to power down, and begins normal operation.

The Model 88 Indicator/Counter is capable of receiving counts and/or analog inputs, processing those inputs in a number of different selectable ways, and then providing outputs in several formats. Base units, i.e. #8800-0000, 8802-0000, or similar units can be programmed for Elapsed Time, Rate, Preset Count/Time, count Add/Sub, or Quadrature. The count inputs can be prescaled from -9.9999 to 99.9999. On the 8802 units, the prescale can be further multiplied by 10^3. Rate can be displayed as the prescaled rate of the count per seconds (Hz) or per minute (rpm). On the 8802 units, the rate can be either prescaled count per hour (PPH) or per minute (rpm). The two independent control outputs are open-collector (NPN) outputs that can be controlled by either count inputs, time, rate, the analog input, or combinations of these inputs. Based on two inputs, the indicator is capable of displaying two counts, a rate indicator and an elapsed time at the same time. The base unit provides the display, programming, and processing functions for the final configuration as well as the counter I/O function. I/O functions and installed modules are available that allow the user to configure complex functions into a small enclosure. Other models add analog input/output functions to the base unit, and serial communication functions, which supports RS232/RS422/RS485, providing the user with a broad selection of configurations.

Each Model 88 base unit is normally powered from a DC voltage of +10V to +32 V. However, an AC power supply module # 200557-002S can be attached to the rear of the unit that converts +90VAC to +285 VAC, 50/60 Hz (unit is normally powered from +10 VDC to +32 VDC).

Features

- Dual up counting
- Preset of time, rate or count
- Directional counting
- 1.2,4x quadrature
- Add/add counting
- Add/subtract counting
- Rate indication on count inputs
- Analog ranges: 0 to 10 VDC or 4 to 20 mA
- Prescaling of analog inputs and counts
- Elapsed timer function available for all modes of operation
- NEMA 4X/IP56 sealed panel
- UL, cUL Recognized, CE Compliant UL file # E19514

Options

- Relay Module 200557-001S
  - 2 form C, 5 amp relays
- Serial Comm. (RS232, RS422, RS485)
- Analog input/outputs
- Display color
- AC Power Module 200557-002S
  +90 VAC to +285 VAC, 50/60 Hz (unit is normally powered from +10 VDC to +32 VDC)

Specifications

Display: LCD, 8 digits, 0.35" [9mm] negative image transmissive red or positive image reflective display. In the negative count mode the display will be 7 digits with a “-” sign. (Reflective display recommended in sunlight)

Annunciators: A, B, R, 1, 2 ANLG, LOCK, HZ, RPM, HRS, SEC. 0.039" [1mm]

Programming: Programming is accomplished through the front panel switches or by serial data interface and dedicated PC software, supplied by Redington Counters, Inc.

Predetermining Functions:

- Preset units provide two discrete outputs which can be controlled as a function of count, rate, elapsed time, or analog input. Each control output can be set by any of the four functions and reset by the same or a different function. For example, control output 1 could be set when a specific count is reached and reset when an analog input level is reached.
**Model 88**  
Electronic LCD Programmable Indicator/Controller

**Predetermining Timer:**

**Programmable Ranges:**
- Hours
- Seconds
- Hours, Minutes & Seconds

**Programmable Decimal Point:**
- Counter A: 4 decimal point locations may be selected.
- Counter B: 4 decimal point locations may be selected.
- Rate Display: 4 decimal point locations may be selected.
- Analog Input: 4 decimal point locations may be selected.
- Time: 4 decimal point locations may be selected.

**Power Requirements:**
- Base unit: +10VDC TO +32VDC @ 50mA max.
- Relay Module: Model 200557-001S; +10VDC to +32VDC @ 50mA, max.
- AC Power Supply: Model 200557-002S; +90VAC to +250 VAC 50/60 Hz @ 6 VA max.

**Memory:**
Nonvolatile EEPROM retains all program parameters and values when power is removed. EEPROM provides 20 year data retention.

**Sensor Power:**
+12VDC @ 100mA, minimum (200557-002S Module)

**Front Panel Lockout:**
Two front panel lockouts are available. In the programming mode, the operator is prohibited from entering new parameters. In the operating mode, the lockout disallows manual reset of any displayed inputs.

**Count/Timer Inputs (Input A & Input B):**
Software selectable: switch contact or voltage input
Software Selectable: filter: no filter or 1st order L.R.
Voltage Mode $V_i$: 2.4VDC, min.
Voltage Mode $V_o$: 0.8VDC, max. or open circuit
Switch Mode $V_i$: 2.4 VDC, min. or open circuit
Switch Mode $V_o$: 0.8VDC, max.
Maximum Input voltage: 32.0VDC
Minimum Input voltage: -0.8VDC

**Counter/Timer Operational Format:**
Input A is used for all count functions
Input B is used for timer enable and all dual Input counter functions (i.e. ADD/ADD, ADD-SUB, DIRECTIONAL COUNT, QUADRATURE, and DUAL COUNT).

**Input Scaling:**
A & B Counters and analog input, (-9.9999 to 99.9999). The 8802 and 8812 units have an option for prescaling the A & B counters from $-9.9999 \times 10^{-3}$ to 99.9999 x $10^{-3}$

**Quadrature Counting:**
Software selectable X1, 2, 4

**Analog Input:**
0 to 10VDC or 4 to 20 mA
Resolution: 4 digit

**Input Impedence:**
150K ohms, for 0 to 10VDC
100 ohms, for 4 to 20 mA

**Max. Count Rate:**
40 KHz for single counter mode.
20 KHz for dual count modes

**Rate Input Units:**
The rate input can be expressed in terms of scaled counts per minute (rP) or scaled counts per second (Hz) of counter A. The 8802 and 8812 units can express rates in terms of scaled counts per minute (rP) or scaled counts per hour of counter A.

**Rate Indicator Accuracy:**
\[ \pm 0.01\%, \text{ References Time Base } @T=25^\circ C \]

**Minimum Input Frequency:**
1 pulse in 10 seconds

**Maximum Input Frequency:**
40 K HZ

**Reset Functions:**
(Automatic & manual)

**Reset-to-Zero:**
Can be programmed so that the output activates when counter equals the preset value, counter returns to zero when reset.

**Reset-to-Preset:**
Can be programmed so that the output activates when counter equals zero, Counter returns to Preset value when reset.

**Resets:**
Automatic or manual.

**Outputs:**
Base unit; Solid-state NPN: (2) Open collector:
\[ I_{SNK}=100mA @V_O=1.1VDC \quad V_{OH}=40VDC \]

**Relay Module:**
Model 200557-001S; 2 form “C” relays rated @ 5 amps 250 VAC, 30VDC(resistive load) 1/10th HP @120VAC (inductive load)

**Relay Life Expectancy:**
100,000 cycles min. @ max. rated load.

**Programmable Timed Outputs:**
Both control outputs can be timed.

**Elapsed Timer Accuracy:**
\[ \pm 0.01\% \quad @T=25^\circ C \]

**Analog Output:**
0 TO 10VDC OR 4 TO 20mA
Accuracy: 0.25% of full scale @ T = 25°C
Resolution: 14 bits

**RS232/RS485/RS422 Serial Communications:**
(Optional)

**Baud Rate:**
Selectable 2400, 4800, 9600, or 19.2K

**Data Length/Parity/Stop Bits:**
8n1

**RS485 Address:**
Programmable from 0 to 99.

**Transceiver Loading:**
RS232/RS485/RS422- up to 16 loads

**Certifications & Compliances:**
UL, cUL- Recognized Component, file # E 195514
CE-Compliant to EN 61326: 1998 for industrial equipment

**Environmental Conditions:**
- Operating Temperature: -4°F to +140°F [-20°C to +60°C]
- Storage Temperature: -40°F to +185°F [-40°C to +85°C]
- Altitude: Up to 6561Ft. (2000 Meters)
- Operating & Storage Humidity: 95% (non-condensing) from -4°F to +140°F [-20°C to +60°C]

**Electrical Connection:**
Wire clamping screw terminals

**Construction:**
High impact black plastic case with “Clip” type mount.
Front panel meets NEMA 4X/IP65 requirements for indoors use, when properly installed. Oversized front panel flange insures proper sealing of panel cutouts.

**Panel Thickness:**
0.05" to 0.20" [1.3 to 5.1mm]

**Weight:**
Less than 3 oz. (85g)
## Ordering Information

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<tr>
<th>MODEL NUMBER</th>
<th>DESCRIPTION</th>
<th>DISPLAY RED TRANSMISSIVE</th>
<th>DISPLAY REFLECTIVE</th>
<th>ANALOG INPUT</th>
<th>ANALOG OUTPUT</th>
<th>RS-485</th>
<th>RS-232</th>
<th>RS 422</th>
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### ACCESSORIES
- 200557-001S Relay module, 2 form C relays
- 200557-002S AC Voltage module, +90VAC to +250VAC also outputs +12VDC for base unit & sensor

**Note:** Reflective display is recommended for applications that will be exposed to direct sunlight

* All parts are normally in factory stock.
Model 88

Electronic LCD Programmable Indicator/Controller

Models | Description
--- | ---

For Models and Descriptions see the Ordering Information section

Dimensions

Panel Cutout 2.63” to 2.605” x 1.28” to 1.26” [66.8 to 66.2 x 32.5 to 32.0]
Max. thickness of panel 0.5” [12.7]

Applications

**Batching**

**Cut-to-length**

**Elapsed time indicator**

**Flow and level control**

**Rate/Indication or control**
Model 88
Electronic
LCD Preset Counter

Description

With two preset outputs, the Model 88 Preset Counter is a panel-mounted instrument that provides the user with incredible flexibility. The Model 88 Preset Counter can be programmed for a number of different input configurations. Programming of the Preset Counter is accomplished through a 4-switch front panel or through an optional serial interface using Redington Counters Redi-Ware, which is downloadable from the Redington Counters website.

The unit has an 8-digit LCD display, which also includes a number of annunciators for ease of use. Constructed in a rugged, black plastic housing, the Model 88 Preset Counter operates from +10VDC to +32VDC power at less than 1 watt.

The Model 88 Preset Counter uses two inputs for counting, which can be set up for various counter applications such as quadrature, add-add, add-subtract, or directional counting. A prescaler is available that ranges from 0 to 99.9999 or from 0 to 0.0999999. The prescaled inputs are added to a 15-digit counter, in which 7 digits are to the right of the decimal point, and 8 digits are to the left. Of the 15 digits, the 12 most significant digits are displayable. The user can define which 8 of the 12 displayable digits are to be displayed by setting the decimal point on the display.

The Model 88 Preset Counter has two open-collector npn outputs. Each is triggered independently by a user-programmable preset count. Each can be automatically reset, manually reset, or reset via an external reset input. The automatic reset can be based on time in seconds, or it can be tied to the other preset output. In this case, a preset output can be on until the other preset output turns on. In addition, the on-state of the output transistor can be defined by the user.

Another feature of the Model 88 Preset Counter is an inhibit input that stops counting on the counter if the feature is enabled by the user. When the inhibit signal is present and active, the counter stops counting until the inhibit signal returns to its inactive state.

The Model 88 Preset Counter is constructed of a printed circuit board assembly housed in a rugged, black plastic housing. The front panel of the unit is composed of an 8-digit LCD. The standard display is transmissive with a red backlight. An optional reflective LCD with dark characters on a silver background is also available. There are also four switches on the front panel that are used for programming and manual resetting of the unit. All of this has been tested to NEMA 4X requirements when properly mounted in a panel. In addition, the unit is UL and cUL recognized, and when properly installed, it is compliant to CE EMC requirements.

The Model 88 Preset Counter comes with a number of options. There is a relay module, which can be attached to the end of the unit. The relay module contains two Form C relays that are controlled by the open-collector npn outputs. There is a Power Supply module that can be attached to the end of the unit. The power supply module generates 12VDC at up to 0.25A to power the Model 88 Preset Counter, a relay module, and still have 100mA for sensor excitation. Finally, the Model 88 can be ordered with a Serial I/O option that can be programmed to provide serial data into and out of the unit in RS232, RS485, and RS422 formats.

Features

- Directional counting
- 1, 2, 4x quadrature
- Add/add counting
- Add/subtract counting
- 2 presets: reset to zero, reset to preset
- Automatic, manual, or external reset
- NEMA 4X/IP65 sealed panel
- UL, cUL Recognized, CE Compliant UL file # E19514

Options

- Relay Module 200557-001S
  - 2 form C, 5 amp relays
- Serial Comm. (RS232, RS422, RS485)
- Display color
- AC Power Module 200557-002S
  - +90 VAC to +285 VAC, 50/60 Hz (unit is normally powered from +10 VDC to +32 VDC)

Specifications

Display: LCD, 8 digits, 0.35” [9mm] negative image transmissive red or positive image reflective display. In the negative count mode the display will be 7 digits with a “-” sign. (Reflective display recommended in sunlight)

Annunciators: A, 1, 2, LOCK, 0.039” [1mm]

Programming: Programming is accomplished through the front panel switches or by serial data interface and dedicated PC software, supplied by Redington Counters, Inc.

Available Functions: Directional Counting
Three different quadrature resolutions
Add-Add
Add-Subtract

Predetermining Functions: Preset units provide two discrete outputs which can be controlled as a function of count. Each output can be latched, timed, or held on until the other preset is reset

Programmable Decimal Point: 4 decimal point locations may be selected.

Power Requirements:
- Base unit: +10VDC to +32VDC @ 50mA max.
- Relay Module: Model 200557-001S; +10VDC to +32VDC @ 50mA, max.
- AC Power Supply: Model 200557-002S; +90VAC to +250 VAC, 50/60 Hz @ 6 VA max.
Memory: Nonvolatile EEPROM retains all program parameters and values when power is removed. EEPROM provides 20 year data retention.

Sensor Power: +12VDC @ 100mA, minimum (200557-002S Module)

Front Panel Lockout: Two front panel lockouts are available. In the programming mode, the operator is prohibited from entering new parameters. In the operating mode, the lockout disallows manual reset of any displayed inputs.

Count Inputs (Input A & Input B):
Software selectable: switch contact or voltage input
Software Selectable: filter: no filter or 160 Hz 1st order L.P.
Voltage Mode $V_{in}; 2.4$VDC, min.
Voltage Mode $V_{in}; 0.8$VDC, max. or open circuit
Switch Mode $V_{in}; 2.4$VDC, min. or open circuit
Switch Mode $V_{in}; 0.8$VDC, max.
Maximum Input voltage: 32.0VDC
Minimum Input voltage: -0.8VDC

Counter Operational Format:
Input A is used for all count functions
Input B is used for timer dual Input counter functions (i.e. ADD/ADD, ADD-SUB, DIRECTIONAL COUNT, & QUADRATURE)

Input Scaling: 0 to 99.9999 x 10^0 or x 10^-3

Quadrature Counting:
Software selectable X1, 2, 4

Max. Count Rate: 40 KHz

Reset-to-Zero: Can be programmed so that the output activates when counter equals the preset value, counter returns to zero when reset.

Reset-to-Preset: Can be programmed so that the output activates when counter equals zero, counter returns to preset value when reset.

Resets: Automatic, manual, and external.

Ordering Information

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>DESCRIPTION</th>
<th>DISPLAY</th>
<th>DISPLAY</th>
<th>RS-485</th>
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ACCESSORIES
200557-001S Relay module 2 form “C” relays rated @ 5 amps 250 VAC, 30VDC (resistive load) 1/10th HP @ 120VAC (inductive load)
200557-002S AC Voltage module, +90VAC to +250VAC also outputs +12VDC for base unit & sensor

Note: Reflective display is recommended for applications that will be exposed to direct sunlight
* All parts are normally in factory stock.
Model 88

Electronic LCD Preset Counter

Models | Description
--- | ---

For Models and Descriptions see the Ordering Information section

**Dimensions**

Model 88

Panel Cutout 2.63” to 2.605” x 1.28” to 1.26” [66.8 to 66.2 x 32.5 to 32.0]
Max. thickness of panel 0.5” [12.7]

**Applications**

- **Batching**
- **Cut-to-length**
- **Elapsed time indicator**
- **Flow and level control**
- **Rate/Indication or control**
Model 88 Electronic LCD Preset Timer

Description

With two preset outputs, the Model 88 Preset Timer is a panel-mounted instrument that provides powerful timing control to any number of applications. The Model 88 Preset Timer can be programmed to operate as either an Hours Timer or a Seconds Timer. In addition, it has a powerful set of user-programmable options for two discrete outputs. At the input side of the unit, the inputs can be configured for voltage or dry contact inputs. Programming of the Preset Timer is accomplished through a 4-switch front panel or through an optional serial interface using Redington Counters Redi-Ware, which is downloadable from the Redington Counters website. The unit has an 8-digit LCD display, which also includes a number of annunciators for ease of use. Constructed in a rugged, black plastic housing, the Model 88 Preset Timer operates from +10VDC to +32VDC power at less than 1 watt.

The Model 88 Preset Timer has two open-collector npn outputs. Each is triggered independently by a user-programmable preset time. Each can be automatically reset, manually reset, or reset via an external reset input. The automatic reset can be based on time in seconds, or it can be tied to the other preset output. In this case, a preset output can be on until the other preset output turns on. In addition, the on-state of the output transistor can be defined by the user.

Another feature of the Model 88 Preset Timer is an inhibit input that stops timing on the timer if the feature is enabled by the user. When the inhibit signal is present and active, the timer stops timing until the inhibit signal returns to its inactive state.

The Model 88 Preset Timer is constructed of a printed circuit board assembly housed in a rugged, black plastic housing. The front panel of the unit is composed of an 8-digit LCD. The standard display is transmissive with a red backlight. An optional reflective LCD with dark characters on a silver background is also available. There are also four switches on the front panel that are used for programming and manual resetting of the unit. All of this has been tested to NEMA 4X requirements when properly mounted in a panel. In addition, the unit is UL and cUL recognized, and when properly installed, it is compliant to CE EMC requirements.

The Model 88 Preset Timer comes with a number of options. There is a relay module, which can be attached to the end of the unit. The relay module contains two Form C relays that are controlled by the open-collector npn outputs. There is a Power Supply module that can be attached to the end of the unit. The power supply module generates 12VDC at up to 0.25A to power the Model 88 Preset Timer, a relay module, and still have 100mA for sensor excitation. Finally, the Model 88 can be ordered with a Serial I/O option that can be programmed to provide serial data into and out of the unit in RS232, RS485, and RS422 formats.

Features

- Programmable for hours or seconds
- Hours displayed to .0001 hrs
- Seconds with 1 msec resolution
- Add/subtract counting
- 2 presets: reset to zero, reset to preset
- Automatic, manual, or external reset
- NEMA 4X/IP56 sealed panel
- UL, cUL Recognized, CE Compliant UL file # E19514

Features

- LCD, 8 digits, 0.35” [9mm] negative image transmissive red or positive image reflective display. In the negative count mode the display will be 7 digits with a “-” sign. (Reflective display recommended in sunlight)
- A, 1, 2, LOCK, 0.039” [1mm]
- Programming is accomplished through the front panel switches or by serial data interface and dedicated PC software, supplied by Redington Counters, Inc.
- Hours
- Seconds

Options

- Relay Module 200557-001S
  2 form C, 5 amp relays
- Serial Comm. (RS232, RS422, RS485)
- Display color
- AC Power Module 200557-002S
  +90 VAC to +285 VAC, 50/60 Hz (unit is normally powered from +10 VDC to +32 VDC)

Specifications

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<th>LCD, 8 digits, 0.35” [9mm] negative image transmissive red or positive image reflective display. In the negative count mode the display will be 7 digits with a “-” sign. (Reflective display recommended in sunlight)</th>
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<td>Programming:</td>
<td>Programming is accomplished through the front panel switches or by serial data interface and dedicated PC software, supplied by Redington Counters, Inc.</td>
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<td>Available Functions:</td>
<td>Hours, Seconds</td>
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<td>Predetermining Functions:</td>
<td>Preset units provide two discrete outputs which can be controlled as a function of count. Each output can be latched, timed, or held on until the other preset is reset</td>
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<td>Programmable Decimal Point:</td>
<td>4 decimal point locations may be selected</td>
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| Power Requirements: | Base unit: +10VDC TO +32VDC @ 50mA max.  
Relay Module: Model 200557-001S; +10VDC to +32VDC @ 50mA, max.  
AC Power Supply: Model 200557-002S; +90VAC to +250 VAC 50/60 Hz @ 6 VA max. |
**Model 88**

**Electronic LCD Preset Timer**

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<th>MODEL NUMBER</th>
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**ACCESSORIES**

- 200557-001S: Relay module, 2 form “C” relays rated @ 5 amps 250 VAC, 30VDC (resistive load) 1/10th HP @120VAC (inductive load)
- 200557-002S: AC Voltage module, +90VAC to +250VAC also outputs +12VDC for base unit & sensor

**Ordering Information**

- Reflective display is recommended for applications that will be exposed to direct sunlight
- All parts are normally in factory stock.

**Specifications**

- **Memory:** Nonvolatile EEPROM retains all program parameters and values when power is removed. EEPROM provides 20 year data retention.
- **Sensor Power:** +12VDC @ 100mA, minimum (200557-0002S Module)
- **Front Panel Lockout:** Two front panel lockouts are available. In the programming mode, the operator is prohibited from entering new parameters. In the operating mode, the lockout disallows manual reset of any displayed inputs.
- **Enable Input:** Software selectable: switch contact or voltage input. Software Selectable: filter: no filter or 160 Hz 1st order L.P.
  - Voltage Mode $V_{II}: 2.4$VDC, min.
  - Voltage Mode $V_{II}: 0.8$VDC, max. or open circuit
  - Switch Mode $V_{II}: 2.4$VDC, min. or open circuit
  - Switch Mode $V_{II}: 0.8$VDC, max.
  - Maximum Input Voltage: 32.0VDC
  - Minimum Input Voltage: -0.8VDC
- **Reset-to-Zero:** Can be programmed so that the output activates when timer equals the preset value, timer returns to zero when reset.
- **Reset-to-Preset:** Can be programmed so that the output activates when timer equals zero, timer returns to preset value when reset.
- **Resets:** Automatic, manual, and external.
- **Outputs:** Base unit: Solid-state NPN: (2) Open collector $I_{SNK}=100mA$ @ $V_{ON}=1.1VDC$ $V_{OL}=40VDC$
- **Relay Module:** Model 200557-001S; 2 form “C” relays rated @ 5 amps 250 VAC, 30VDC (resistive load) 1/10th HP @120VAC (inductive load)
- **Relay Life Expectancy:** 100,000 cycles min. @ max. rated load.

**Programmable Timed Outputs:**
Both control outputs can be timed.

**RS232/RS485/RS422 Serial Communications:** (Optional)
- Baud Rate: Selectable 2400, 4800, 9600, or 19.2K
- Data Length/Parity/Stop Bits: 8n1
- RS485 Address: Programmable from 0 to 99.
- Transceiver Loading: RS232/RS485/RS422: up to 16 loads

**Certifications & Compliances:**
- UL, cUL- Recognized Component, file # E 195514
- CE-Compliant to EN 61326: 1998 for industrial equipment

**Environmental Conditions:**
- Operating Temperature: -4°F to +140°F [-20°C to +60°C]
- Storage Temperature: -40°F to +185°F [-40°C to +85°C]
- Altitude: Up to 6561Ft. (2000 Meters)
- Operating & Storage Humidity: 95% (non-condensing) from -4°F to +140°F [-20°C to +60°C]

**Electrical Connection:** Wire clamping screw terminals

**Construction:**
- High impact black plastic case with “Clip” type mount. Front panel meets NEMA 4X/IP65 requirements for indoors use, when properly installed. Oversized front panel flange insures proper sealing of panel cutouts. Gaskets for front panel are provided.

- **Panel Thickness:** 0.05" to 0.20" [1.3 to 5.1mm]
- **Weight:** Less than 3 oz. (85g)

**Note:** Reflective display is recommended for applications that will be exposed to direct sunlight

* All parts are normally in factory stock.
For Models and Descriptions see the Ordering Information section

**Dimensions**

Panel Cutout 2.63” to 2.605” x 1.28” to 1.26” [66.8 to 66.2 x 32.5 to 32.0]
Max. thickness of panel 0.5” [12.7]

**Applications**

- Batching
- Cut-to-length
- Elapsed time indicator
- Flow and level control
- Rate/Indication or control
Model 88
Electronic LCD Programmable Totalizer

Description
The Model 88 is a programmable LCD Totalizer, with eight 7-segment digits that are 0.35” [9mm] in height. The standard display is a backlit LCD, providing red characters on a dark background. An optional reflective LCD with dark characters on a light background is available. Unit programming is accomplished using four front-panel switches, or programming can be done using the optional serial data interface and dedicated PC-based software (Redi-Ware), which is available from Redington free of charge. Upon power up, the Totalizer performs internal diagnostics and flashes all segments of the display “ON” and “OFF” several times. The Totalizer then configures itself per previous programming, loads the internal Counters and Timers with their values prior to power down, and begins normal operation.

The Model 88 Programmable Totalizer is capable of receiving input pulses, processing those input pulses in a number of different, selectable ways, and then displaying the results. The Totalizer is capable of operating in a single-up count mode, as well as add-subtract, directional counting, add-add, and three levels of quadrature. In addition, the unit can support independent counting of two separate inputs. Counts can be pre-scaled by scale factors ranging from -9.9999 to 99.9999 or from -9.9999 x 10^{-3} to 99.9999 x 10^{-3}. Maximum count speed is up to 40KHz for single count modes and 20KHz for the dual count mode. Maximum input speed can be limited by enabling an analog filter on each input, thereby protecting count integrity from unwanted noise. The input format can also be selected. In addition, a serial data interface option is available to report counts from remote locations or to program the Totalizer. Each Model 88 base unit is normally powered from a DC voltage of +10V to +32V. However, an AC power supply module #200557-002S can be attached to the rear of the unit that converts +90VAC to +250VAC, to +12VDC, which can be used to power the Model 88 and an external sensor.

Features
- Dual up counting
- Directional counting
- 1,2,4x quadrature
- Add/add counting
- Add/subtract counting
- Prescaling of counts
- NEMA 4X/IP66 sealed panel
- UL, cUL Recognized, CE Compliant UL file #E19514

Options
- Serial Comm. (RS232, RS422, RS485)
- Display color
- AC Power Module 200557-002S
  +90 VAC to +285 VAC, 50/60 Hz (unit is normally powered from +10 VDC to +32 VDC)

Specifications
Display: LCD, 8 digits, 0.35” [9mm] negative image transmissive red or positive image reflective display. In the negative count mode the display will be 7 digits with a “-“ sign. (Reflective display recommended in sunlight)
Annunciators: A, B, LOCK, 0.039” [1mm]
Programming: Programming is accomplished through the front panel switches or by serial data interface and dedicated PC software, supplied by Redington Counters, Inc.

Available Functions:
- Totalizer
- Directional Counting
- Three different quadrature resolutions
- Add/Add
- Add-Subtract
- Dual Count

Programmable Decimal Point:
Counter A: 4 decimal point locations may be selected.
Counter B: 4 decimal point locations may be selected.

Power Requirements:
- Base unit: +10VDC to +32VDC @ 50mA max.
- AC Power Supply: Model 200557-002S; +90VAC to +250 VAC 50/60 Hz @ 6 VA max.

Memory: Nonvolatile EEPROM retains all program parameters and values when power is removed. EEPROM provides 20 year data retention.

Sensor Power: +12VDC @ 100mA, minimum (200557-002S Module)

Counter Operational Format:
Input A is used for all count functions
Input B is used for all dual Input counter functions (i.e. ADD/ADD, ADD-SUB, DIRECTIONAL COUNT, QUADRATURE, and DUAL COUNT).

Input Scaling: A & B Counters (-9.9999 to 99.9999, or -9.9999 x 10^{-3} to 99.9999 x 10^{-3})
Model 88  
Electronic LCD Programmable Totalizer

Quadrature Counting:  
Software selectable X1, 2, 4

Max. Count Rate:  
40 KHz for single counter mode.  
20 KHz for dual count modes.

Reset Functions:  
Manual and remote.

Environmental Conditions:  
Operating Temperature:  
-4°F to +140°F [-20°C to +60°C]

Storage Temperature:  
-40°F to +185°F [-40°C to +85°C]

Operating & Storage Humidity:  
to 95% (non-condensing) from -4°F to +140°F [-20°C to +60°C]

Altitude:  
Up to 6561Ft. (2000 Meters)

Electrical Connection:  
Wire clamping screw terminals

Construction:  
High impact black plastic case with "Clip" type mount.  
Front panel meets NEMA 4X/IP65 requirements for indoors use, when properly installed.  
Oversized front panel flange insures proper sealing of panel cutouts.  
Gaskets for front panel are provided.

Panel Thickness:  
0.05” to 0.20” [1.3 to 5.1mm]

Weight:  
Less than 3 oz. (85g)

Certifications & Compliances:  
UL, cUL- Recognized Component, file # E 195514  
CE-Compliant to EN 61326: 1998 for industrial equipment

Ordering Information

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>DESCRIPTION</th>
<th>DISPLAY RED</th>
<th>TRANSMISSIVE</th>
<th>DISPLAY REFLECTIVE</th>
<th>ANALOG INPUT</th>
<th>ANALOG OUTPUT</th>
<th>RS-485/422</th>
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<tbody>
<tr>
<td>8803-0000</td>
<td>Base unit, Red Trans., 10-30VDC, Prescale</td>
<td>X</td>
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<tr>
<td>8803-0100</td>
<td>Red Trans., 10-30VDC, Prescale, Serial Communications</td>
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</tbody>
</table>

ACCESSORIES  
200557-002S  AC Voltage module,  
+90VAC to +250VAC also outputs +12VDC for base unit & sensor  
Note:  Reflective display is recommended for applications that will be exposed to direct sunlight  
* All parts are normally in factory stock.

Dimensions

Model 88 Totalizer

Panel Cutout 2.63” to 2.605” x 1.28” to 1.26” [66.8 to 66.2 x 32.5 to 32.0]  
Max. thickness of panel 0.5” [12.7]

Applications

Flow meter  
Panel builders  
Piece count  
Secondary equipment  
Test equipment
Model 33 Electronic LCD Counter

Description

The Redington Model 33 line of LCD counters provides a large display, 7mm high figures, in an eight digit counter. The counters are available in a variety of mountings: 2-hole rectangular, 3-hole round, flush-round and flush-rectangular. Voltage operating ranges are 10-277 VDC AND 20-277VAC. All models are totally sealed from moisture and dirt and conform to NEMA 4 & 4X specifications when mounted with the optional gasket. Their rugged construction makes them ideal replacements for current electromechanical counters. Units have polarized LCD for high visibility in sunlight.

Features

- AC or DC voltage input in the same unit
- Totally sealed from moisture and dirt
- Always on display
- Compact depth
- Clip retainer mount or screws (supplied)

Options

- Custom logos and bezels
- Terminations
- Remote reset - dry contact with 6” wire leads
- Gaskets
  - 5003-002S gasket for 2-hole mount
  - 5003-003S gasket for flush-rectangular mount
  - 5003-004S gasket for flush-round mount
  - 5003-005S gasket for 3-hole round mount

Specifications

| Display: | LCD with large 0.28” [7mm] high figures, black on light background |
| Records & Displays: | 8 digit (99999999) |
| Inputs: | 10 to 277VDC AND 20-277VAC |
| Speed: | 25 counts per second |
| Battery Life: | 7+ years |
| Shock: | 44 to 55g’s, SAE J1378 |
| Vibration: | 20 g @ 10 to 80 Hz, SAE J1378 |

Humidity: 95% SAE J1378
Operating Temperature: -40°F to +185°F [-40°C to +85°C]
Sealing: Totally sealed, panel gaskets-NEMA 4 & 4X
Agency Approvals: CE compliant
Termination: UL/cUL recognized (file# ELIY2.E36690)
Reset: Optional - dry contact with 6” wire leads
Case Material: Polymer (black)
Weight: 1oz [28g]

* Vih is the input high voltage. This is specified as the minimum input voltage that the Model 33 will recognize as a high level.
Vil is the input low voltage. This is specified as the maximum input voltage that the Model 33 will recognize as a low level.

Note: When interfacing the Model 33 with a Solid State Relay or AC Sensor, the leakage current needs to be considered. Contact the factory or see the application note at www.redingtoncounters.com for further information.

Models | Description | Models | Description
--- | --- | --- | ---
3301-1000 | 3-Hole Round, 10-277 VDC AND 20-277VAC | 3301-1010 | 3-Hole Round, 10-277 VDC AND 20-277VAC, remote reset

* All Items are normally in factory stock.

www.redingtoncounters.com
Model 33 Electronic LCD Counter

Dimensions

2-Hole

In-front panel cutout: 1.45 X 0.95 [24.0 x 37.0]
Behind panel cutout: 1.42 X 0.90 [22.9 x 36.1]

3-Hole Round

Panel cutout: 1.45 X 0.95 [24.0 x 37.0]

Flush-Round

Panel cutout: 1.45 X 0.95 [24.0 x 37.0]
Maximum panel thickness: 0.15 [3.8]

Flush-Rectangular

Panel cutout: 1.45 X 0.95 [24.0 x 37.0]
Maximum panel thickness: 0.15 [3.8]

Applications

Medical Devices

Control Panels

Secondary Equipment

Test Equipment

Production Equipment

Office Equipment

www.redingtoncounters.com
The Redington Model 33 line of LCD hour meters provides a large display, 7mm high figures, in the industry size housings. The hour meters are available in a variety of mountings: 2-hole rectangular, 3-hole round, flush-round and flush-rectangular. Voltage operating ranges are 10-277 VDC AND 20-277VAC 50/60Hz. All models are totally sealed from moisture and dirt and conform to NEMA 4 & 4X specifications when mounted with the optional gasket. The Model 3311-1020 is not NEMA 4 & 4X rated. Their rugged construction makes them ideal replacements for current hour meters. Units have polarized LCD for high visibility in sunlight.

### Features
- AC or DC voltage input in the same unit
- Totally sealed from moisture and dirt
- Run indicator-blinking decimal point
- Always on display
- Compact depth
- AC Voltage input is not frequency sensitive
- Clip retainer mount or screws (supplied)

### Options
- Custom logos and bezels
- Terminations
- Remote reset - dry contact with 6” wire leads
- Manual reset - Model 3311-1020 has a front panel push button
- Gaskets
  - 5003-002S gasket for 2-hole mount
  - 5003-003S gasket for flush-rectangular mount
  - 5003-004S gasket for flush-round mount
  - 5003-005S gasket for 3-hole round mount

### Specifications

| Display: | LCD with large 0.28” [7mm] high figures, black on light background |
|-----------------------------------------------|
| Run Indicator: | Blinking decimal point |
| Quartz Accuracy: | 0.02% over entire voltage & temperature range |
| Records & Displays: | 6 digit (99999.9) |
| Inputs: | 10 to 277VDC AND 20-277VAC-50/60Hz |
|            | Vih* 20VAC or 10VDC minimum |
|            | Vil* 3VAC or 3VDC maximum |
| Battery Life: | 7+ years |
| Shock: | 44 to 55g’s, SAE J1378 |
| Vibration: | 20 g @ 10 to 80 Hz, SAE J1378 |
| Humidity: | 95% SAE J1378 |
| Operating Temperature: | -40°F to +185°F [-40°C to +85°C] |
| Sealing: | Totally sealed, panel gaskets-NEMA 4 & 4X |
| Agency Approvals: | CE compliant |
| UL/cUL recognized (file# EL1Y2.E36690) |
| Termination: | 0.250” [6.4mm] spades |
| Reset: | Front panel push button - Model 3311-1020 |
| Case Material: | Polymer (black) |
| Weight: | 1oz [28g] |
| Protection Against: | Alternator load dump: 150V |
|            | EMI(Electromagnetic Interference): +400V |
|            | @ 500Hz inductive switching and reverse polarity |

Note: When interfacing the Model 33 with a Solid State Relay or AC Sensor, the leakage current needs to be considered. Contact the factory or see the application note at www.redingtoncounters.com for further information.

### Models

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3311-0000</td>
<td>2-Hole Rect., 10-277 VDC AND 20-277VAC</td>
</tr>
<tr>
<td>3311-1000</td>
<td>3-Hole Round, 10-277 VDC AND 20-277VAC</td>
</tr>
<tr>
<td>3311-2000</td>
<td>Flush Rect., 10-277 VDC AND 20-277VAC</td>
</tr>
<tr>
<td>3311-3000</td>
<td>Flush-Round, 10-277 VDC AND 20-277VAC</td>
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</table>

### Models

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3311-0010</td>
<td>2-Hole Rect., 10-277 VDC AND 20-277VAC, remote reset</td>
</tr>
<tr>
<td>3311-1010</td>
<td>3-Hole Round, 10-277 VDC AND 20-277VAC, remote reset</td>
</tr>
<tr>
<td>3311-2010</td>
<td>Flush Rect., 10-277 VDC AND 20-277VAC, remote reset</td>
</tr>
<tr>
<td>3311-3010</td>
<td>Flush-Round, 10-277 VDC AND 20-277VAC, remote reset</td>
</tr>
<tr>
<td>3311-1020</td>
<td>3-Hole Round, 10-277 VDC AND 20-277VAC, manual reset</td>
</tr>
</tbody>
</table>

All parts are normally in factory stock.
**Model 33**

**Electronic LCD Hour Meter**

### Dimensions

#### 2-Hole

- **In-front panel cutout:** 1.45 X 0.95 [24.0 x 37.0]
- **Behind panel cutout:** 1.42 X 0.90 [22.9 x 36.1]

#### 3-Hole Round

- **Panel cutout:** 1.45 X 0.95 [24.0 x 37.0]
- **For 3311-1020 (manual reset), panel cutout is 2.0 [50.6]**

#### Flush-Round

- **Panel cutout:** 1.45 X 0.95 [24.0 x 37.0]
- **Maximum panel thickness:** 0.15 [3.8]

#### Flush-Rectangular

- **Panel cutout:** 1.45 X 0.95 [24.0 x 37.0]
- **Maximum panel thickness:** 0.15 [3.8]

### Applications

- **Agricultural Equipment**
- **Medical Devices**
- **Pressure Washers**
- **Sweepers**
- **Construction Equipment**
- **Marine Applications**
- **Generators**
- **Office Equipment**
- **Test Equipment**
- **Boom Lifts**
- **Compressors**
- **Utility Vehicles**

[www.redingtoncounters.com]
Model 53
Electronic LCD Totalizer

Description
The Model 53 Electronic Totalizer with 7 or 8 LCD digits is ideal as a replacement for electromechanical totalizers or where external power is not available. Powered by an internal lithium battery these products are highly reliable and provide the user with a choice of several options; with or without reset and multiple count ranges for optimized performance. The case is available in either tan or black.

Features
- Lithium battery
- Choice of non-reset or remote reset
- Switch (no-voltage), 3-30VDC, 20-250VAC/VDC

Options
- Case color
- Mounting adapter plates
- 8 digits
- 5003-001S - gasket
- Low AC voltage (4-30 VAC)

Specifications

| Figures: | 7 or 8 LCD figures, 0.32” [8mm] high |
| Reset: | Remote, manual, and non-reset |
| Speed: | 0-40 counts/second [min. 12.5ms - on, 12.5ms - off] |
| 7 Digit: | 0-150 counts/second [min. 3.3ms - on, 3.3ms - off] |
| 8 Digit: | 0-35 count/second [min. 14.3ms - on, 14.3ms - off] |
| Inputs: | Switch (no-voltage), 3-30VDC, 20-250VAC/VDC |
| | Vh 20VAC/3VDC minimum |
| | Vi 3VAC/1VDC maximum |
| Weight: | 2 oz. [57g] |
| Temperature: | -4°F to +140°F [-20°C to +60°C] |
| Operating: | -40°F to +165°F [-40°C to +75°C] |
| Humidity: | 0 to 95% RH, non-condensing |
| Vibration: | Operating: 10 to 55Hz, 0.01” [0.25mm] double amplitude |
| | Non-Operating: 10 to 55Hz, 0.03” [0.75mm] double amplitude |
| Shock: | Operating: 10G |
| Non-Operating: | 30G |
| Dielectric: | 1000VAC 50/60Hz for 1 minute |
| Accuracy: | 100% [Provided Signal Meets Stated Parameters] |
| Approvals: | UL Recognized, CSA Certified, CE Compliant |

Note: When interfacing the Model 53 with a Solid State Relay or AC Sensor, the leakage current needs to be considered. Contact the factory or see the application note at www.redlingtoncounters.com for further information.

Models

<table>
<thead>
<tr>
<th>Models</th>
<th>Reset</th>
<th>Input</th>
<th>Speed/cps</th>
<th>Terminations</th>
<th>Color</th>
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<td>5300-1010</td>
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<td>X</td>
</tr>
</tbody>
</table>

* Items in bold are normally in factory stock.

All part numbers shown are for 7 digit models. Please contact the factory for information on 8 digit models.

Dimensions

TERMINAL BLOCK

WIRE LEADS
NOTES:

INPUT / RESET PARAMETERS
To insure proper performance from totalizers the following minimum input durations are required:

- 0 to 35 cps totalizer: Minimum 14.3 ms "on" 14.3 ms "off" The count is activated on the falling edge.
- 0 to 40 cps totalizer: Minimum 12.5 ms "on" 12.5 ms "off" The count is activated on the falling edge.
- 0 to 150 cps totalizer: Minimum 3.3 ms "on" 3.3 ms "off" The count is activated on the rising edge.

All resettable totalizers can be reset by a pulse with a minimum duration of 6 milliseconds.

DUAL RANGE TOTALIZER PROTECTION FEATURE:
Dual range totalizers have a built-in range protection feature. This feature will protect the totalizer from receiving a false signal from the unused input line. Once a totalizer has received an input from pin #1 or pin #2, it will only accept inputs from that pin until the unit has been reset. For example, if a totalizer is run in the low speed range and it is determined that a high speed range is preferred, simply switch the input from pin #2 to pin #1 and reset the totalizer to de-activate this range protection feature. Conversely, if a totalizer is run in high speed range and it is determined that a low speed range is preferred, simply switch the input from pin #1 to pin #2 and reset the totalizer.

SPECIAL WIRING OPTION
There is an internal connection between pin 3 and pin 5, a single wire can be used by connecting it to either pin 3 or pin 5. This option does not apply for units with input of 20 - 250VAC/VDC or manual reset enable.

OPTIONAL INPUTS:
Optional control circuity (such as transistors) may be used as inputs provided that such circuity provides the required parameters of the model used.

Applications

Number of Parts
Shear
Packaging Line
# Model 53 Electronic LCD Hour Meter

## Description

The Model 53 Hour Meter with 7 LCD digits, 999999.9, and internal lithium battery, is ideal for applications requiring time accumulation for maintenance scheduling, warranty monitoring, lease time or fee computation. Applications include test equipment, panel builders, mobile equipment and medical devices. A choice of time ranges, in hours, minutes or seconds provides the user with a wide choice of recording increments.

## Features
- Lithium battery
- Choice of manual reset, remote reset or non-reset
- Switch (no-voltage), 3-30VDC, 20-250VAC/VDC

## Specifications

**Figures:** 7 LCD figures, 0.32” [8mm] high  
**Reset:** Remote, manual, and non-reset  
**Inputs:** Switch (no-voltage), 3-30VDC, 20-250VAC/VDC (50/60Hz)  
**Vih** 20VAC/3VDC minimum  
**Vil** 3VAC/1VDC maximum  
**Power:** Self-powered (internal lithium battery)  
**Mounting:** Panel with clip  
**Terminations:** Terminal block, or connector - 8” [200mm] wire leads  
**Weight:** 2 oz. [57g]  
**Battery Life:** ~20years  
**Accuracy:** Quartz accuracy (better than 0.01%)  
**Approvals:** UL Recognized, CSA Certified, CE Compliant

Note: When interfacing the Model 53 with a Solid State Relay or AC Sensor, the leakage current need to be considered. Contact the factory or see the application note at www.redingtoncounters.com for further information.

## Models

<table>
<thead>
<tr>
<th>Part#</th>
<th>Function</th>
<th>Reset</th>
<th>Input</th>
<th>Terminiations</th>
<th>Color</th>
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<tbody>
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* Items in bold are normally in factory stock.
Model 53
Electronic LCD Hour Meter

Dimensions

<table>
<thead>
<tr>
<th>TERMINAL BLOCK</th>
<th>WIRE LEADS</th>
</tr>
</thead>
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<tr>
<td>1.92 [48.8]</td>
<td>1.92 [48.8]</td>
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<tr>
<td>0.10 [2.5]</td>
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<td>1.72 [43.7]</td>
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<td>1.47 [37.3]</td>
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<td>0.86 [21.8]</td>
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</tr>
</tbody>
</table>

Operating Instructions

MOUNTING:

Unit | Optional Gasket | Panel | Clip
--- | --- | --- | ---

The mounting clip accommodates panel thicknesses up to 1/4" [6.4mm]. Panel adapter plates are available in flush and 2 hole mount to fit various panel cutouts. Consult the factory for availability.

WIRING:

**SWITCH (non-voltage)**

<table>
<thead>
<tr>
<th>INPUT</th>
<th>RESET</th>
</tr>
</thead>
<tbody>
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<tr>
<td>3</td>
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<tr>
<td>5</td>
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</table>

(Pin 1 is not used)

**3 - 30 VDC**

<table>
<thead>
<tr>
<th>INPUT</th>
<th>DC</th>
<th>RESET</th>
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<tr>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Pin 1 is not used)

**20 - 250VAC/VDC**

<table>
<thead>
<tr>
<th>INPUT</th>
<th>AC/DC</th>
<th>RESET</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Pin 1 is not used)

Color code for the 6" [203mm] lead wires (24AWG) are:

1 - Yellow
2 - Blue
3 - Black
4 - Violet
5 - Gray

Terminal block will accept wire sizes from 14 to 24AWG.

3 - 30VDC units are protected for transient voltages up to 50 volts with pulse widths of up to 1 second at a 1% duty cycle (including reverse polarity).

The operating AC frequency range is 40 to 400Hz.

NOTES:

All resettable hour meters can be reset by a pulse with a minimum duration of 6 milliseconds.

SPECIAL WIRING OPTION

There is an internal connection between pin 3 and pin 5, a single wire can be used by connecting it to either pin 3 or pin 5. This option does not apply for units with input of 20 - 250VAC/VDC or manual reset enable.

OPTIONAL INPUTS:

Optional control circuitry (such as transistors) may be used as inputs provided that such circuitry provides the required parameters of the model used.

Applications

- Medical Equipment
- Test Equipment
- Office Equipment

www.redingtoncounters.com
The Model 53 Tachometers are self-powered by an internal lithium battery. They provide a low cost solution to accurately measure speed or production rates for a number of manufacturing and process applications. A wide selection of inputs, dry contact closure, 3-30VDC or 20-250VAC/VDC, make the Model 53 adaptable to most applications. When used with the appropriate sensor, the unit can display units per minute, length per minute or revolutions per minute. The maximum input rate is 10,000 counts per minute.

### Features
- Lithium battery
- Choice of non-reset or remote reset
- Switch (no-voltage), 3-30VDC, 20-250VAC/VDC

### Options
- Termination
- Case color
- Private labeling
- Mounting adapter plates
- 5003-001S - gasket

### Specifications
- **Figures:** 4 LCD figures, 0.32" [8mm] high
- **Reset:** Remote, manual, or non-reset
- **Speed:** 10,000 counts/minute
- **Inputs:** Switch (no-voltage), 3-30VDC, 20-250VAC/VDC
- **Power:** Self-powered (internal lithium battery)
- **Mounting:** Panel
- **Terminations:** Terminal block, or connector -w/ 8" [200mm] wire leads
- **Battery Life:** ~20years
- **Temperature:**
  - Operating: -4°F to +140°F [-20°C to +60°C]
  - Non-Operating: 10 to 55Hz, 0.01" [0.25mm] double amplitude
- **Vibration:**
  - Operating: 10 to 55Hz, 0.03" [0.75mm] double amplitude
  - Non-Operating: 10 to 55Hz, 0.03" [0.75mm] double amplitude
- **Humidity:** 0 to 95% RH, non-condensing
- **Dielectric:** 1000VAC 50/60Hz for 1 minute
- **Accuracy:** Typically within 1% above 700Hz
- **Weight:** 2 oz. [57g]
- **Approvals:** UL Recognized, CSA Certified, CE Compliant

### Models

<table>
<thead>
<tr>
<th>Models</th>
<th>Reset</th>
<th>Input</th>
<th>Speed/RPM</th>
<th>Terminations</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>5330-0000</td>
<td>X</td>
<td>switch</td>
<td>3-30VDC</td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td>5330-001</td>
<td>X</td>
<td>X</td>
<td></td>
<td>2500</td>
<td></td>
</tr>
<tr>
<td>5330-1000</td>
<td>X</td>
<td>manual</td>
<td>3-30VDC</td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td>5330-1001</td>
<td>X</td>
<td>manual</td>
<td>20-250VAC/VDC</td>
<td>2500</td>
<td></td>
</tr>
<tr>
<td>5330-2000</td>
<td>X</td>
<td>X</td>
<td></td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td>5330-2001</td>
<td>X</td>
<td></td>
<td></td>
<td>2500</td>
<td></td>
</tr>
<tr>
<td>5330-2200</td>
<td>X</td>
<td></td>
<td></td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td>5330-2201</td>
<td>X</td>
<td></td>
<td></td>
<td>2500</td>
<td></td>
</tr>
</tbody>
</table>

### Dimensions

**TERMINAL BLOCK**

- 1.92 [48.8]
- 0.10 [2.5]
- 1.72 [43.7]
- 1.47 [37.3]
- 1.02 [25.9]
- 0.86 [21.8]

**WIRE LEADS**

- 1.92 [48.8]
- 0.10 [2.5]
- 1.47 [37.3]
- 0.86 [21.8]
Operating Instructions

MOUNTING:

The mounting clip accommodates panel thicknesses up to 1/4" [6.4mm].

Panel adapter plates are available in flush and 2 hole mount to fit various panel cutouts. Consult the factory for availability.

WIRING:

Color code for the 8" [203mm] lead wires (24AWG) are:
1 - Yellow
2 - Blue
3 - Black
4 - Violet
5 - Gray

Terminal block will accept wire sizes from 14 to 24AWG.

3 - 30VDC units are protected for transient voltages up to 50 volts with pulse widths of up to 1 second at a 1% duty cycle (including reverse polarity).

The operating AC frequency range is 40 to 400Hz.

NOTES:

All resettable hour meters can be reset by a pulse with a minimum duration of 6 milliseconds.

SPECIAL WIRING OPTION

There is an internal connection between pin 3 and pin 5, a single wire can be used by connecting it to either pin 3 or pin 5. This option does not apply for units with input of 20 - 250VAC/VDC or manual reset enable.

OPTIONAL INPUTS:
Optional control circuitry (such as transistors) may be used as inputs provided that such circuitry provides the required parameters of the model used.

Applications

Motor/pulley Speed
Model 94  

Electronic LCD Totalizer

Description

A 6 figure, battery powered, push-button or key reset, electronic counter, available in base mount or panel mount configuration. No external power supply is required. Large 0.50” [12mm] LCD figures for fast, easy reading. Operates at 6-240 VAC or VDC. Long lasting internal lithium battery. Attractive styling and silent operation make these models equally well-suited for lab or office equipment applications.

Features

- No external power supply needed
- Long life lithium battery
- Large easy reading display
- Operates at 6 to 240 VAC or VDC

Specifications

<table>
<thead>
<tr>
<th>Figures:</th>
<th>6 LCD figures, 0.50” [12mm] high</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset:</td>
<td>Push-button, or lock and key</td>
</tr>
<tr>
<td>Speed:</td>
<td>0-40 counts/second, (min. 12.5ms - on, 12.5ms - off)</td>
</tr>
<tr>
<td>Input:</td>
<td>6-240VAC or VDC</td>
</tr>
<tr>
<td>Vih</td>
<td>6VAC/VDC minimum</td>
</tr>
<tr>
<td>Vil</td>
<td>2VAC/VDC maximum</td>
</tr>
</tbody>
</table>

- Non-reset
- Remote reset

Mounting: Base or panel

Terminations: (2) #22 AWG 221°F [105°C] wire leads, 8” [203mm] long

Temp. Range: -14°F to +122°F [-26°C to +50°C]

Power Source: Internal lithium battery

Weight: 18 oz. [510g]

Note: When interfacing the Model 94 with a Solid State Relay or AC Sensor, the leakage current needs to be considered. Contact the factory or see the application note at www.redingtoncounters.com for further information.

Models

- 9415-001 6 figure, base mount, push-button reset
- 9415-003 6 figure, panel mount, push-button reset
- 9415-005 6 figure, panel mount, lock and key reset

* Items in bold are normally in factory stock.

Applications

- Office equipment
- Production
- Test labs
- Control panels

Dimensions

- Base Mount
- Panel Mount

Panel Mount/Lock & Key Reset

Panel cutout: 4.75” x 1.50” [76.2mm x 44.5mm]
Mounting holes: 0.17” [4.3mm] Dia.

Notes:

- Non-reset
- Remote reset
- Base or panel
- (2) #22 AWG 221°F [105°C] wire leads, 8” [203mm] long
- -14°F to +122°F [-26°C to +50°C]
- Internal lithium battery
- 18 oz. [510g]

Note: Contact the factory or see the application note at www.redingtoncounters.com for further information.

www.redingtoncounters.com
## Model 94 Electronic LCD Hour Meter

A 6 figure, battery powered, push-button or key reset, electronic hour meter, available in base mount or panel mount configuration. No external power supply is required. Large 0.50" [12mm] LCD figures for fast, easy reading. Operates at 6-240 VAC or VDC. Long lasting internal lithium battery. Attractive styling and silent operation make these models equally well-suited for lab or office equipment applications.

### Features
- No external power supply needed
- Long life lithium battery
- Large easy reading display
- Operates at 6 to 240 VAC or VDC

### Options
- Non-reset
- Remote reset
- Minutes meter
- Seconds meter

### Specifications

| Figures: | 6 LCD figures, 0.50" [12mm] high |
| Reset:   | Push-button, or lock and key      |
| Input:   | 6-240VAC (50/60Hz) or 6-240VDC    |
|          | Vh  6VAC/VDC minimum              |
|          | Vi  2VAC/VDC maximum              |
| Mounting:| Base or panel                     |

Terminations: (2) #22 AWG 221°F [105°C] wire leads, 8" [203mm] long
Temp. Range: -14°F to +122°F [-26°C to +50°C]
Power Source: Internal lithium battery
Weight: 18 oz. [510g]

Note: When interfacing the Model 94 with a Solid State Relay or AC Sensor, the leakage current needs to be considered. Contact the factory or see the application note at www.redingtoncounters.com for further information.

### Models & Description

<table>
<thead>
<tr>
<th>Models</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9425-001</td>
<td>6 figure, base mount, push-button reset</td>
</tr>
<tr>
<td>9425-003</td>
<td>6 figure, panel mount, push-button reset</td>
</tr>
<tr>
<td>9425-005</td>
<td>6 figure, panel mount, lock and key reset</td>
</tr>
</tbody>
</table>

* Items are normally in factory stock.

### Dimensions

#### Base Mount

- Mounting holes: 0.14" x 0.24" [3.6mm x 6.1mm] slots
- Panel cutout: 4.75" x 1.50" [76.2mm x 44.5mm]
- Mounting holes: 0.17" [4.3mm] Dia.

#### Panel Mount

- Panel cutout: 3.0" x 1.75" [76.2mm x 44.5mm]
- Mounting holes: 0.17" [4.3mm] Dia.

### Applications

- Office equipment
- Production
- Test labs
- Control panels

www.redingtoncounters.com

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