

# RED LION CONTROLS

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## MODEL SCT - 10 KHZ, 6-DIGIT TOTALIZING COUNTER Adaptable To A Wide Variety Of Counting, Measurement & Position Readout



- 6-DIGIT, 0.43" (11 mm) L.E.D. DISPLAY
- RESET ON POWER-UP
- CONTROL INPUTS FOR:
  1. Remote Reset
  2. Up/Down Counting
  3. Count Inhibit
  4. Display Store
  5. Display Blanking (For Battery Backup Operation)
- COUNT INPUT PROGRAMMABLE TO ACCEPT OUTPUTS FROM ALL STANDARD SENSORS

### DESCRIPTION

The Model SCT is a very versatile totalizing counter that can be adapted to a wide variety of counting, measuring, and position readout applications. Based on solid-state technology and circuit designs proven in tens of thousands of field applications, this unit exhibits outstanding noise immunity and reliability.

The SCT uses the standard programmable count-input circuit featured in all SC Counters. This input circuit accepts count pulses from all RLC sensors and from almost all other available sensors. It also accepts switch contact, variable resistance, voltage or current level signals, as well as outputs from TTL and CMOS circuits.

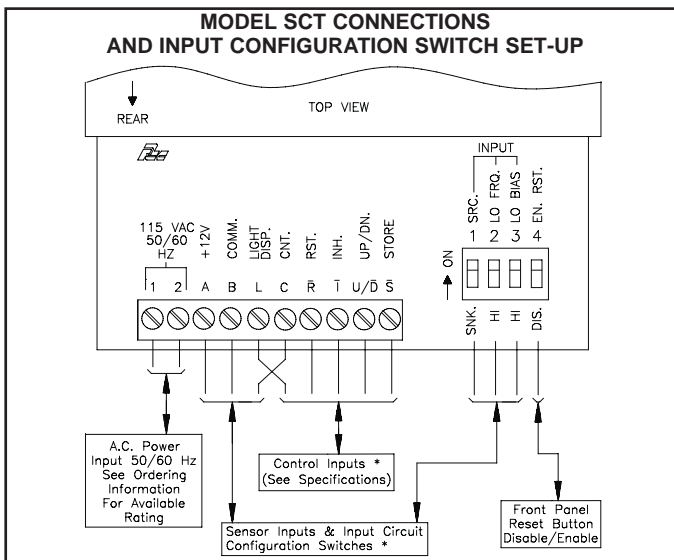
The selection of control inputs provide an additional degree of application flexibility. These control inputs allow the Model SCT to be used in a variety of specialized measuring applications that go well beyond routine counting. The Model SCT totalizer can be used as a stand-alone counter or as a systems component with other counters and/or accessory items to provide complex counting, timing and control functions not available in any single instrument.

### SPECIFICATIONS

1. **PRIMARY SUPPLY VOLTAGE:** Available in four voltage ranges, 50/60 Hz (See Ordering Information). Allowable supply voltage variation  $\pm 10\%$ . Input power 5 VA. Note: All units may also be operated from +12VDC Supplies connected to Terminals A and B.
2. **\*SENSOR OUTPUT POWER (TERM."A"):** +12 VDC  $\pm 15\%$  @ 50 mA
3. **CURRENT DRAIN FROM BATTERY BACKUP:** 60 mA with displays blanked and without sensor load. 450 mA with full display on (all 8's) but less sensor load.
4. **OPERATING TEMPERATURE RANGE:** -20° to +50°C
5. **CONSTRUCTION:** Steel Case, Aluminum Bezel, Aluminum Front Panel with Polycarbonate Overlay, Black Epoxy Paint Finish. Connections on rear via screw terminal strips. Clamp type pressure plates accept stripped #14

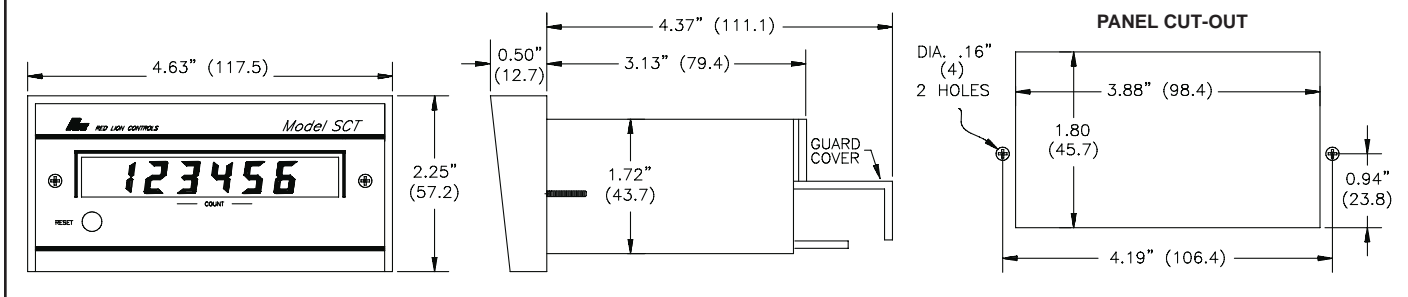
wires without lugs. (Tinning of stranded wire is recommended for easy installation.)

6. **WEIGHT:** 1.1 lb (0.5 Kg).



\* - See SC Series Input Connections & Input Configuration Switch Set-up, Note 1 or "Applications" section of the Catalog

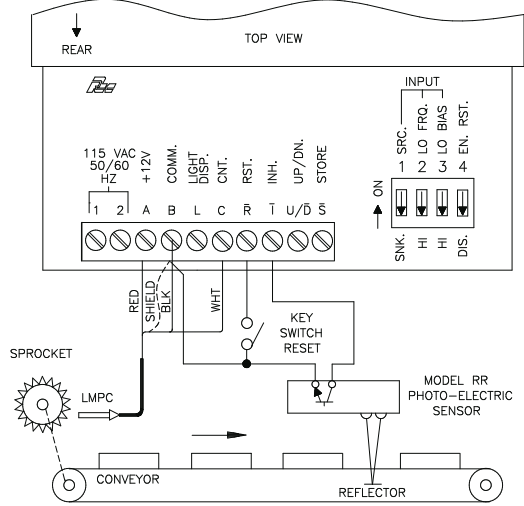
### DIMENSIONS "In inches (mm)"



# MODEL SCT TYPICAL APPLICATIONS

Counters are generally thought of as devices that tabulate or count "things" such as bottles, cans, boxes, castings etc. While these are popular uses, SC Series counters are capable of much more. The typical applications shown below involve length and position measurement. They illustrate the versatility of the Model SCT in particular and of SC Counters in general.

## 1. USING INHIBIT FUNCTION IN LENGTH MEASUREMENT

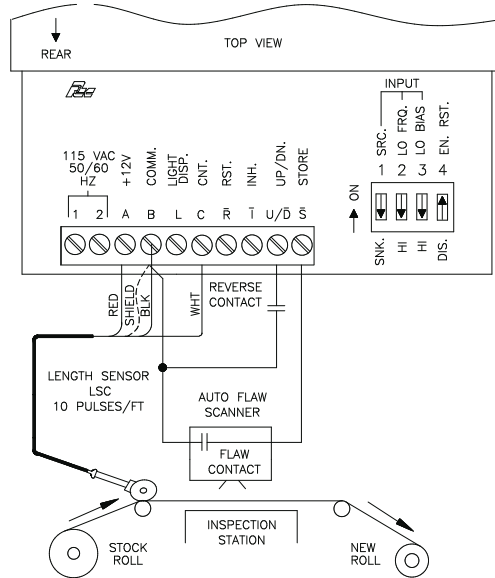


This system accumulates the total length of random pieces of bar stock being moved on a conveyor. Count input pulses are generated by an LMPC magnetic sensor that detects passing teeth on a conveyor drive sprocket. Since 10 teeth pass the sensor per foot of conveyor motion, the counter will display feet in 1/10ths.

A photo-scanner controls the Inhibit input (INH.) and monitors a reference point on the conveyor. It permits the counter to accumulate counts only when bar stock is moving by. The front panel Reset button of the counter is disabled (S4 OFF) to prevent unauthorized reset and the counter is zeroed with a remote key-switch.

*Note: Magnetic sensing should be used for counting only in special situations, such as this example, where the speed of passing sprocket teeth is always above the minimum threshold speed while counting.*

## 2. USING STORE & UP/DOWN FUNCTION

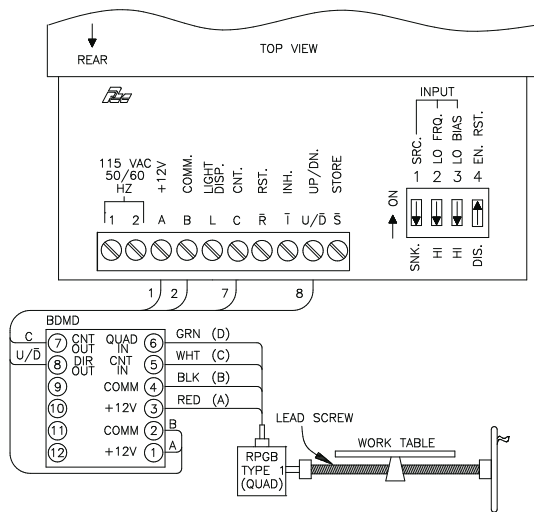


In this application, a length of material is to be measured and inspected for flaws as it is wound on a new roll. The measurement is accomplished by using a 1 pulse/ft Length Sensor driving the counter to measure in feet.

An automatic flaw detector interrupts rewind power, sounds an alarm, and activates (pulls low) the "S" input of the Model SCT to freeze the display when a flaw is detected. Since the inertia of the rolls prevents a sudden stop, a considerable amount of overrun is experienced. The counter will continue accumulating footage internally during the overrun even though the display is "stored" at the flaw footage.

After the rolls have stopped, the operator notes the "stored" display number. When the flaw detector is reset, the "store" contact opens and the total footage is now displayed. The rewind drive is reversed at a slow speed and an auxiliary drive contact causes the counter to count down. When the display decrements down to the previously noted "flaw footage", the motion is stopped, the flaw corrected, and operation is resumed.

## 3. POSITION INDICATION USING THE BI-DIRECTIONAL MOTION DECODER WITH QUADRATURE SIGNALS



Position measurement usually implies bi-directional motion, and requires that a counter have the ability to increment and decrement in step with the forward and reverse motion of the measuring mechanism without losing or gaining erroneous counts. This can be accomplished by use of a Bi-Directional Motion Decoder which operates from two signals arranged in quadrature. (See Model BDMD in Accessories Section of the catalog for a detailed description of operation).

Both count and direction information is present in the two quadrature related signals. The BDMD decodes this information and sets the U/D control input prior to delivering a count pulse so the counter is properly incremented or decremented depending on the direction of motion. In the application shown here, the quadrature signal is produced by an \*RPG (Type 1 output) with a 100 pulse per revolution pulse rate, coupled to a lead screw with a 0.1 inch pitch. This produces a count pulse for every thousandth of an inch of table motion. To initialize the system, the table is moved to the extreme end in the count-down direction, the counter is then reset to zero, and all readings are referenced to this point, representing position numbers.

*Note: SC Counters do not have ± sign notation, and display complementary numbers when counting down through zero into the "negative" region. In this example, this is avoided by establishing zero at one extreme of travel. If ± notation is required, refer to 600 Series Counters which have algebraic readout with sign notation.*

\* See Sensor Section of Catalog for Description of RPG.

## ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PART NUMBERS	
		230 VAC	115 VAC
SCT	6-Digit Totalizing Counter	SCT00610	SCT00600

For more information on Pricing, Enclosures & Panel Mount Kits refer to the RLC Catalog or contact your local RLC distributor.