

### CT6000 Process Counter

- Displays process, batch, total and rate.
- Completely field adjustable.
- Full diagnostic functions.
- Three programmable transistor set point outputs.
- Three programmable AC inputs.
- Non-volatile memory.
- NEMA 4 faceplate.
- Keypad lockout.
- ETL approved to applicable UL & CSA standards.
- Optional relay and 4-20 mA outputs.



## Product Information

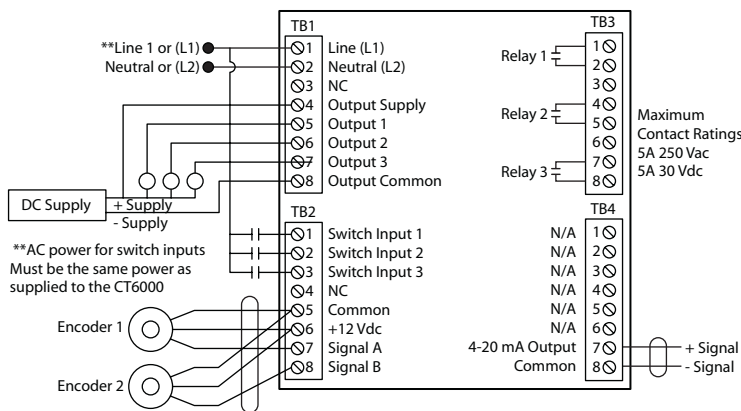
### Description

The CT6000 is a full logic control process counter that can display up to three separate count values and compare them to programmable set points. The counter can be programmed by the user for any pulse prescale value. The count can be programmed for up count, down count, quadrature, sum of two channels (A + B), and the difference between the two channels (A - B). The sum and difference are commonly used when the operator needs to display the combined output of two separate but related processes. Electro-Sensors products bring efficiency and safety to your operations by preventing machine damage, product waste and costly downtime.

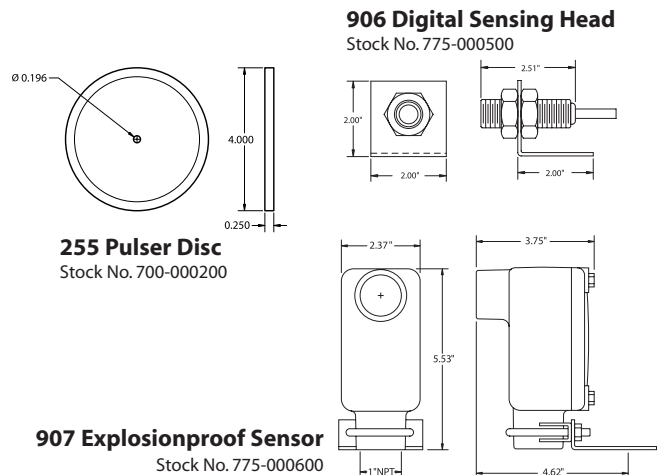
### Principle of Operation

The CT6000 is supplied with a shaft-mounted pulser disc (or optional pulser wrap), which generates an alternating magnetic field that is picked up by the large-gap non-contact sensor. The sensor transmits this speed signal as a digital pulse (frequency) to the CT6000 via a 3-conductor shielded cable. The CT6000 then compares this frequency signal to its programming and determines the appropriate set point output state and display value. The CT6000 features three transistor outputs that can be set within any of the three counts or rate. These outputs can be programmed to latch (requiring a manual reset), or they can be timed to reset automatically.

### Terminal Strip Connection • CT6000



### Dimensional Drawings\*



## Large-Gap Sensor Installation

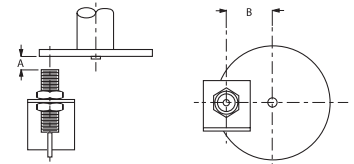
The standard sensor is supplied with a mounting bracket and two jam nuts. Optional explosionproof sensor is supplied with a slotted mounting bracket, also easily adjustable. Sensors should be installed allowing the center of the magnets to pass in front of the center of the sensing head during rotation. The gap distance between the sensor and disc or wrap (Dimension A shown opposite) is  $3/8" \pm 1/8"$ . When using a standard 4" pulser disc, the center of the magnetized area of the disc (Dimension B shown opposite) is  $1-3/4"$  from the center hole of the disc.

### Available Options:

- 4-20 mA output can be programmed to represent any of the three counts or rates. The 4-20 mA output can be scaled to reflect section of the count range; including operations requiring an inverse output.
- Up to three programmable relay contact outputs rated 250 Vac, 30 Vdc at 5 amps resistive load.

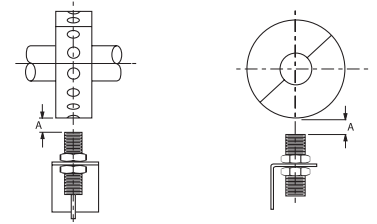
### Standard 906 Sensor and Disc\*

Figure 1

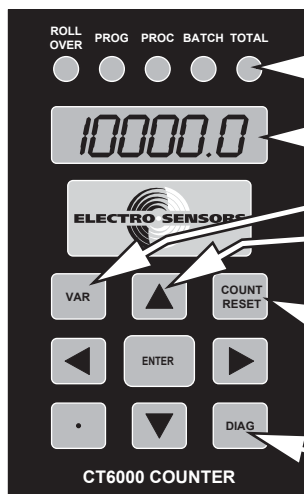


### Standard 906 Sensor and Wrap\*

Figure 2



\* 907 Explosionproof Sensing Head is also compatible with discs and wraps.



Status LEDs Give Entry Mode and Operation Status.

Display Window

Used to Change or Examine Program

Cycles the display from process to batch, to total, to rate and back to process "Proc" LED flashes in rate mode.

Used to clear displayed count and reset any outputs associated with that count.

Used to test the counter

## Entering Variables Into the CT6000

To change a variable, press the **VAR** key. The **PROG LED** will light, and the display will read **PR**, followed by the presently selected variable number. Press the **▲** or **▼** keys to change the value of the 1's location to the desired variable number. Then use the **◀** key to move to the 10's position and change the value of the desired number. Press the **ENTER** key and the selected variable's value will be displayed, and the 1's location will flash in the display window. Press the **▲** or **▼** keys to change the value of the 1's location. Use the **◀** or **▶** keys to move to the 10's, 100's, 1000's or 10,000's position (the selected position will flash) and then use the **▲** or **▼** keys to change the value. If the entry is a negative number, the +/- can be toggled using the **▲** or **▼** keys when the +/- sign is flashing. Only variables that allow a negative number will permit this. To add a decimal point, press the **•** key. The decimal point will scroll from right to left one digit each time the **•** key is pressed. Press the **ENTER** key to enter the new value. Pressing the **VAR** key without pressing **ENTER** will keep the old value and return the counter to the readout mode.

Note: The variables are protected by Variable 00 - Security Code. You may view variables but cannot change them unless the correct security code is entered.

## Specifications • CT6000 Process Counter

### Input Power

Voltage ..... 115 Vac, 7 VA, 1/16 amp External Fuse Recommended  
Optional 230 Vac & 12 Vdc

Sensor Input ..... Switch Selectable  
NPN Open Collector ..... 2200 Ohm Pull Up to 12 Vdc, 2.5 Volt Trigger level

PNP Open Collector ..... 2200 Ohm Pull Down, 2.5 Volt Trigger Level

Logic Level ..... 2.5 Volt Trigger level  
Magnetic Pickup ..... 150 mv Peak to Peak Minimum Signal, 50 mv Trigger Level

Maximum Frequency ..... 20,000 Hz  
Sensor Supply ..... 12 Vdc Unregulated, 100 mA Max.

### External Control I/O

Std. Inputs ..... 3 Programmable AC Switch Inputs  
Std. Set Point Outputs ..... 3 Programmable, Open Collector Transistors, NPN 30 Vdc 150 mA Max.  
Opt. Set Point Outputs ..... 3 Programmable N.O. Contacts, Rated 250 Vac 5A, 30 Vdc 5A Resistive Load

Opt. Analog Output ..... 1 Programmable 4-20 mA Output, 12 bits Max load 500  $\Omega$

### Operational

Response Time ..... Minimum 0.02 Seconds  
Modes of Operation ..... Process, Batch, Total, Rate.  
Set Point Presets ..... Process, Batch, Total, Rate.  
Display Update Time ..... 0.1 Second Update Time  
Input Mode ..... Channel A, Channel B, Sum, Difference and Quadrature.

### Mechanical

Enclosure ..... ABS Plastic 94V-0  
Keypad ..... Polycarbonate Tactile Switch Pad, Chemical Resistant, Splashproof  
Display ..... 6 Digit, 0.3" Height, 7-Segment Displays, 5 Status LEDs  
Operating Temperature ..... 0° C to +50° C (+32° F to +122° F)  
Humidity ..... 0% to 90% Non-Condensing

Dimensions ..... **3.10" W x 4.85" H x 6.25" L**  
Panel Cutout ..... **2.61" W x 4.31" H**

Specifications subject to change without notice.

ES-402 Rev B