

# Etsilon



## Count Totaliser/ Rate Indicator CNT701

### Features

- ▶ 6 digit, 7 segment LED count totaliser
- ▶ Rate or count selectable through DIP switch
- ▶ Inbuilt sensor supply
- ▶ Front and terminal reset
- ▶ Compact size
- ▶ IP65 for faceplate
- ▶ 48 x 96mm

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## A) SAFETY PRECAUTIONS

### **⚠ SAFETY SUMMARY**

All safety related modifications, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of the operating personnel as well as the instrument.

If the equipment is not handled in a manner specified by the manufacturer it might impair the protection provided by the equipment.

- Read complete instructions prior to installation and operation of the unit.

**⚠ WARNING:** Risk of electric shock.

### **INSTALLATION GUIDELINES**

#### **⚠ INSTALLATION GUIDELINES:**

1. This equipment, being built-in-type, normally becomes a part of main control panel and in such case the terminals do not remain accessible to the end user after installation and internal wiring.
2. Do not allow pieces of metal, wire clippings, or fine metallic fillings from installation the product or else it may lead to a safety hazard that may in turn endanger life or cause electrical shock to the operator.
3. Circuit breaker or mains switch must be installed between power source and supply terminals to facilitate power 'ON' or 'OFF' function. However this switch or breaker must be installed in a convenient position normally accessible to the operator.
4. Use and store the temperature controller within the specified ambient temperature and humidity ranges as mentioned in this manual.

#### **⚠ CAUTION:**

1. When powering up for the first time, disconnect the output connections.
2. Fuse protection: The unit is normally supplied without a power switch and fuses. Make wiring so that the fuse is placed between the mains power supply switch and the controller. (2 pole breaker fuse-rating: 275V AC, 1A for electrical circuitry is highly recommended)
3. Since this is a built-in-type equipment (finds place in main control panel), its output terminals get connected to host equipment. Such equipment shall also comply with basic EMI/EMC and other safety requirements like BSEN61326-1 and BSEN61010 respectively.
4. Thermal dissipation of equipment is met through ventilation holes provided on chassis of equipment. Such ventilation holes shall not be obstructed else it can lead to a safety hazard.
5. The output terminals shall be strictly loaded to the manufacturer specified values/range.

### **ELECTRICAL PRECAUTIONS DURING USE**

Electrical noise generated by switching of inductive loads can create momentary disruption, erratic display, latch up, data loss or permanent damage to the instrument.

## B) OVERVIEW

### **SPECIFICATIONS**

#### **1. DISPLAY**

<b>Display</b>	6 digit, 0.56" height, 7 seg LED (white). <b>Counter:</b> 6 digits, <b>Rate:</b> 4 digits.
<b>Keys</b>	1 key for reset
<b>Inputs</b>	3 to 30V DC from Proximity switches, Encoders, Potential free contacts, Limit switches etc.
<b>Input speed</b>	Slow speed: 3Hz, High speed: 5KHz
<b>Sensor supply</b>	12V DC @30mA (±10%)
<b>Reset</b>	1. On front panel. 2. Remote reset (Via rear terminals).
<b>Memory retention</b>	10 years
<b>Range</b>	Counter: 999999 Rate: Auto ranging (4.00 to 9999 RPM)
<b>Mounting</b>	Panel mount

## 2. POWER SUPPLY SPECIFICATION

<b>Supply voltage</b>	90 to 270V AC/DC, 50/60 Hz, 5VA max
<b>Temperature</b>	Operating: 0 to 50 °C, Storage: -20 to 75 °C
<b>Humidity</b>	95% RH (non-condensing)
<b>Weight</b>	100 gm
<b>Protection level</b>	IP65 for faceplate

## MECHANICAL INSTALLATION

1. Prepare the panel cutout with proper dimensions as shown below.
2. Fit the unit into the panel (self locking mechanism).
3. The equipment in its installed state must not come in close proximity to any heating sources, caustic vapors, oils, steam, or other unwanted process by products.
4. Do not connect anything to unused terminals.
5. Use minus type screw driver to remove unit from the panel. Put screw driver in the cavity of clamp and gently push outside.

## PANEL THICKNESS

0.5mm (minimum) and 2.5mm (maximum)

## EMC Guidelines:

1. Use proper input power cables with shortest connections and twisted type.
2. Layout of connecting cables shall be away from any internal EMI source.

Outline dimension (in mm)	Panel cutout dimension (in mm)

## FRONT PANEL DESCRIPTION

<p><b>Counter:</b> Turn OFF the dip switch no.1 to enter into counter mode. <b>Range:</b> 999999</p>	<p><b>Rate:</b> Turn ON the dip switch no.1 to enter into rate mode. <b>Range:</b> 4.00 to 9999 RPM</p>
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## C) TERMINAL CONNECTION

TERMINALS	DESCRIPTION
+12V	+12V
CNT GND	Count
GND RST	Terminal reset
N	Neutral (-)
L	Live (+)

## DIP SWITCH SETTING

PARAMETERS	DIP SWITCH	ON	OFF
Mode	1	Rate	Counter
Speed selection	2	Slow speed	High speed
Front key reset	3	Enable	Disable
Sensor selection	4	NPN	PNP

## DIP SWITCH SETTING EXAMPLE

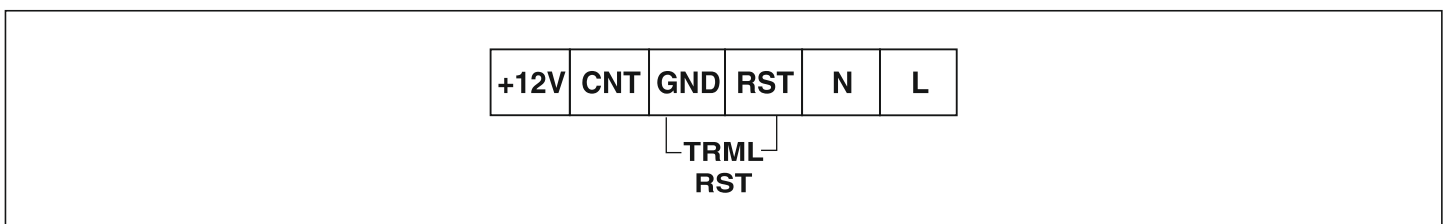
	Mode-Rate Speed selection-High speed Front key reset-Disable Sensor selection-NPN
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**NOTE:** DIP switch for mode settings is on the top of the instrument.

## RESET METHOD

**By front key:** Turn on dip switch 3 to enable front key reset. Press RST key momentarily.

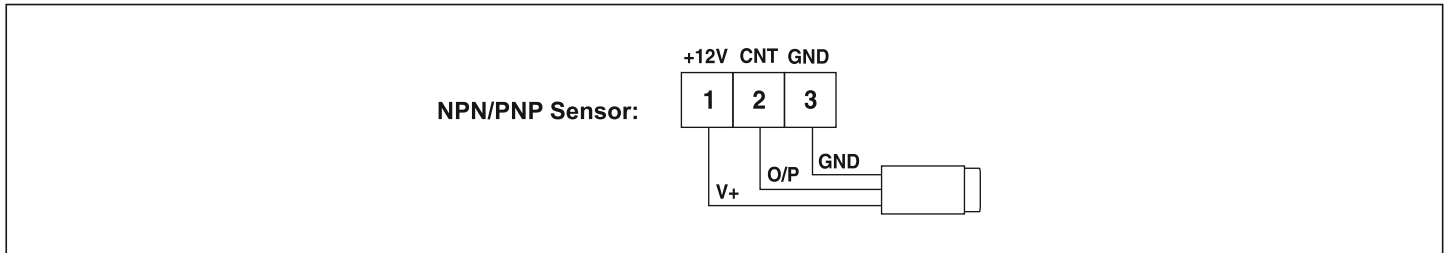
**By terminals:** Short terminals GND & RST to reset the unit via terminals.



## TYPICAL APPLICATION

**CASE1:** Operated by external contact.

- 1) A PNP/NPN proximity sensor can be used instead of a switch. (NPN/PNP can selected through DIP SW)
- 2) Connect proximity switch between terminals 1, 2 & 3.
- 3) The Count / Rate will be displayed on CNT701

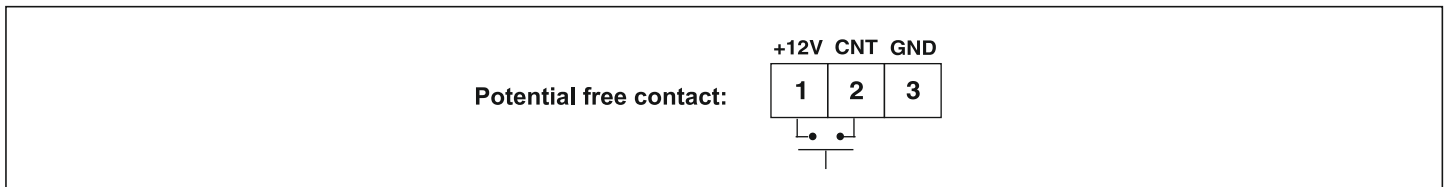


**(Sensor color codes:**

Red = +12V, Green = CNT, Black = GND

Brown = +12V, Black = CNT, Blue = GND)

**CASE2:** Operated only by potential free contact



**Note 1:** Sensor selection (PNP/NPN) is detected only at power ON .

**Note 2:** Potential free count will work only during NPN selection.

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