



# CI-12

**12mm Incremental Encoder**

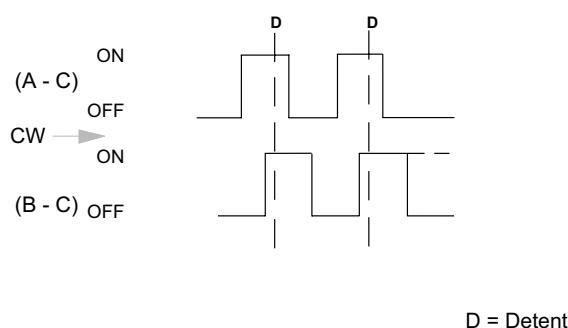
## FEATURES

- Plastic shaft
- Compact design
- 2 bit in quadrature code
- Available in vertical mount
- Contact type
- Endless rotation
- Push-on switch (optional)
- 12 or 24 pulses per rev.
- Available with or without detents

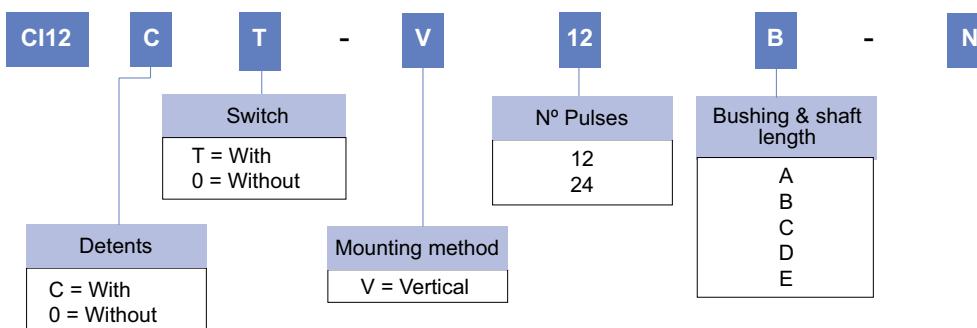
## STANDARD SPECIFICATIONS

|                        |                            |
|------------------------|----------------------------|
| Operating Temperature: | -40°C to +85°C             |
| Mechanical life (min): | 30.000 cycles              |
| Rotational torque:     | 0.3 to 2 Ncm               |
| Push on switch:        | 0.5 mm. travel             |
| Contact Resistance:    | 100 mΩ Initial (max)       |
| Pulses / Detents:      | 12/00, 12/12, 24/00, 24/24 |

## GRAPH CODE

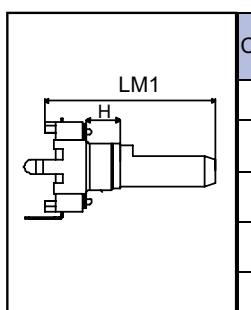


## HOW TO ORDER



Standard Models:  
CI12CT-V24D-N  
CI12C0-V24D-N  
CI12CT-V24B-N  
CI12C0-V24B-N

## BUSHING & SHAFT LENGTH



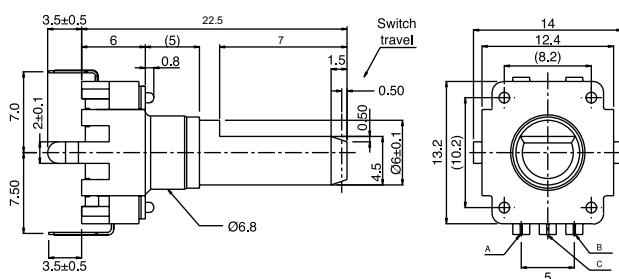
| CODE | LM1  | H   |
|------|------|-----|
| A    | 17.5 | 5   |
| B    | 20   | 5   |
| C    | 22.5 | 5   |
| D    | 25   | 5   |
| E    | 15   | 1.6 |

NOTE: The information contained here should be used for reference purposes only.

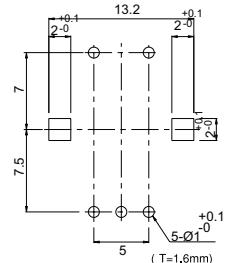
## STANDARD DIMENSIONS

### With switch

#### CI12CT-V24C-N

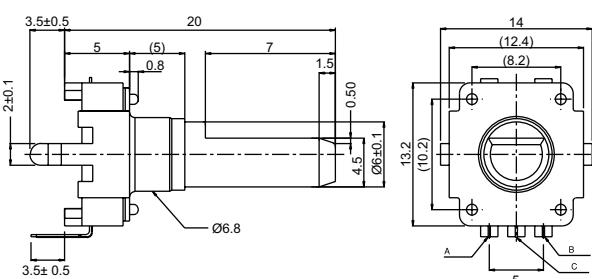


P.C.B. Hole Detail

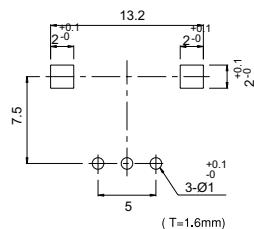


### Without switch

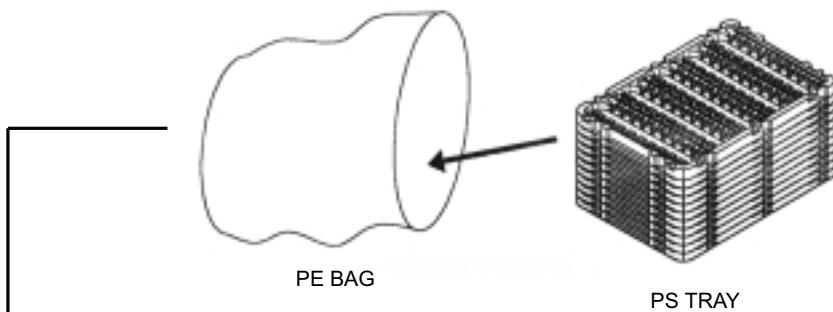
#### CI12C0-V12B-N



P.C.B. Hole Detail

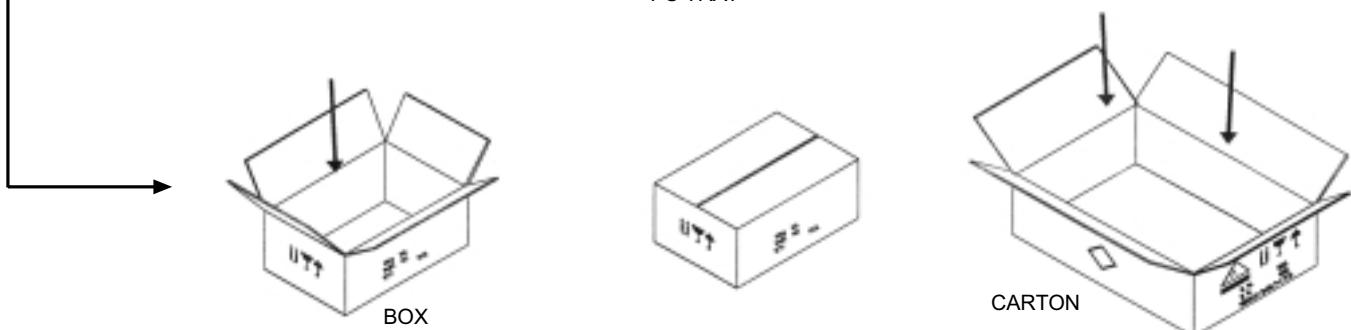


## PACKAGING



100 pieces per PVC tray  
10 trays per box  
1000 pieces per box  
2000 pieces per carton (2 boxes)

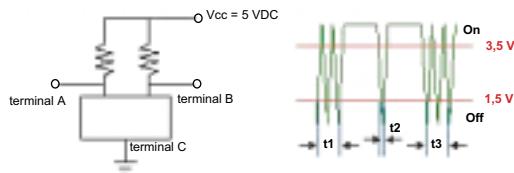
Box dimensions: 35.5 x 24.9 x 15.5 cm  
Carton dimensions: 51.2 x 36.7 x 17 cm



## TEST CIRCUIT DIAGRAM

Measurements shall be made under the following conditions.

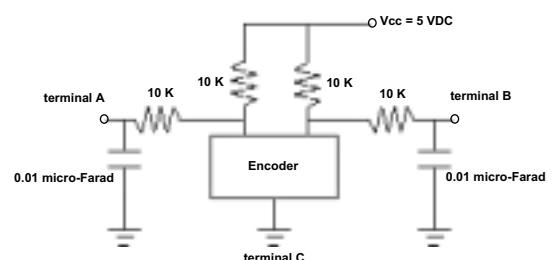
- (1) Shaft rotational speed: 360 degrees/second
- (2) Test circuit as follows:



On area: The area which the voltage is 3.5V or more  
Off area: The area which the voltage is 1.5V or less

## R/C FILTER TEST CIRCUIT

The R/C filter circuit as shown is recommended in the pulse count process design



## SPECIFICATIONS

### Electrical

- Resolution: 360°
- Rated Power: 5 VDC 10 mA (1 mA min.)
- Insulation Resistance: 10 MΩ (min.) @ 50 VDC 1 mA
- Dielectric Strength: 1500 VAC for 1 min (Leak current 1 mA)  
(between the terminal and the shaft)
- Sliding Noise: t1, t3 ≤ 3 ms, t2 ≤ 2 ms (under 360°/S test condition)
- Phase Difference: 0.08T min.

### Mechanical

- Number of Detents: 12, 24
- Rotational Torque: 0.3 to 2 Ncm (with detents)  
0.5 Ncm Max. (without detents)
- Shaft play in axial direction 0.7x l/30 mm p-p max
- Push-Pull Strength of Shaft: 40 N(4kgf)/10 sec

### Switch

- Type: SPST
- Switching Function: (On)-Off
- Contact Resistance: 100 mΩ (max.) @ initial
- Insulation Resistance: 100 MΩ (min.) @ 250 VDC 1 mA
- Dielectric Strength: 300 VAC 1 mA for 1 minute
- Operating Force: 4.5 ± 1.5 N (450±153 gf)

### Durability

- Operating Temperature: -40°C to +85°C
- Storage Temperature: -40°C to +85°C
- Switch type: Circuit single pole and single throw (push on)
- Switch Travel: 0.5mm
- Contact Resistance: initial period 100mΩ, 200mΩ after the end of useful life is reached  
min 30,000 cycles
- Mechanical life: -40 ± 3°C for 240±10H
- Cold: 85 ± 3°C for 240±10H
- Dry heat: 40 ± 2°C 90 to 95% RH for 240±10H
- Damp heat:

# Mouser Electronics

Authorized Distributor

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[CI12CT-V24B-N](#) [CI12CO-V24B-N](#)