



### FEATURES

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

### 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 |

### TYPICAL APPLICATIONS

All kind of applications which require a single or multi-function rotary control interfaced with a digital electronic circuit:

#### - Consumer:

Home appliances: Washing Machine/Microwave Oven timer & temperature programming controls, Hi-Fi, CD, Mini Disc and MP3 players, volume, tone and title search controls.

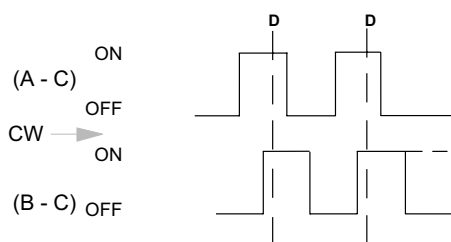
#### - Multimedia:

LCD & CRT Monitor multi-function mode select control (using push-on switch option)

#### - Professional:

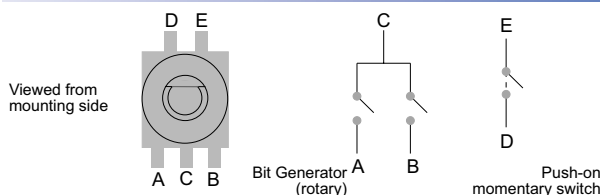
Input/output adjustment for Digital Audio Mixers.

### GRAPH CODE

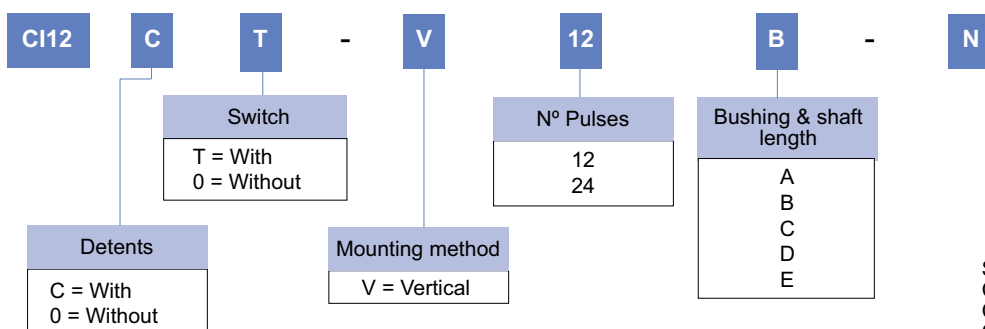


D = Detent

### TERMINAL DESIGNATIONS



### HOW TO ORDER



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

### BUSHING & SHAFT LENGTH

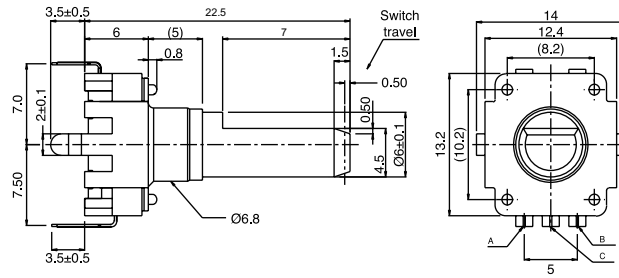
| CODE | LM1  | H   |
|------|------|-----|
| A    | 17.5 | 5   |
| B    | 20   | 5   |
| C    | 22.5 | 5   |
| D    | 25   | 5   |
| E    | 15   | 1.6 |

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

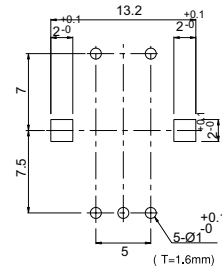
## STANDARD DIMENSIONS

### With switch

#### CI12CT-V24C-N

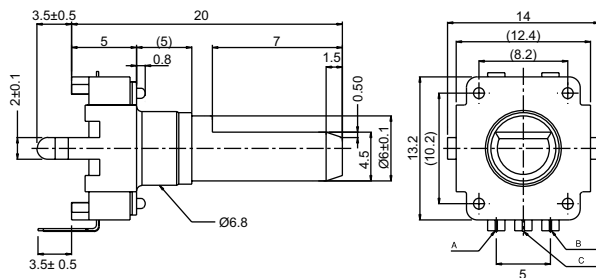


P.C.B. Hole Detail

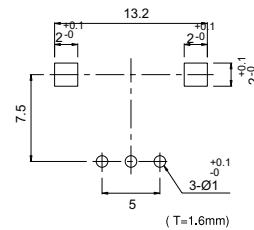


### Without switch

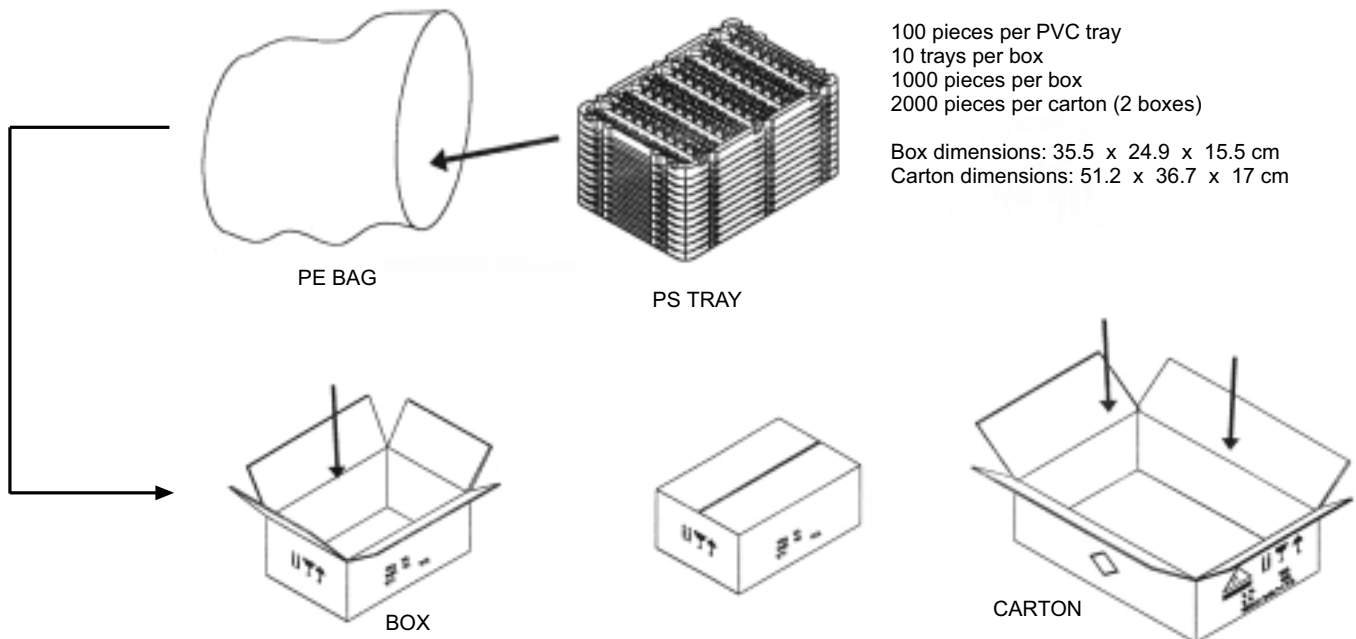
#### CI12C0-V12B-N



P.C.B. Hole Detail



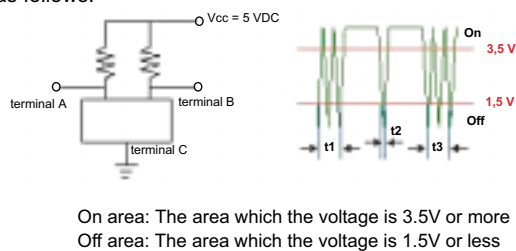
## PACKAGING



## TEST CIRCUIT DIAGRAM

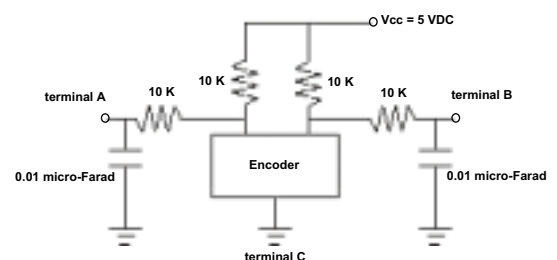
Measurements shall be made under the following conditions.

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



## 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 M $\Omega$  (min.) @ 50 VDC 1 mA
- Dielectric Strength: 1500 VAC for 1 min (Leak current 1 mA)  
(between the terminal and the shaft)
- Sliding Noise:  $t_1, t_3 \leq 3$  ms,  $t_2 \leq 2$  ms (under 360°/S test condition)
- Phrase 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 m $\Omega$  (max.) @ initial
- Insulation Resistance: 100 M $\Omega$  (min.) @ 250 VDC 1 mA
- Dielectric Strength: 300 VAC 1 mA for 1 minute
- Operating Force:  $4.5 \pm 1.5$  N (450 $\pm$ 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 100m $\Omega$ , 200m $\Omega$  after the end of useful life is reached
- Mechanical life: min 30,000 cycles
- Cold: -40  $\pm$  3°C for 240 $\pm$ 10H
- Dry heat: 85  $\pm$  3°C for 240 $\pm$ 10H
- Damp heat: 40  $\pm$  2°C 90 to 95% RH for 240 $\pm$ 10H

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Piher:

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