



# CI-12

12mm Incremental Encoder

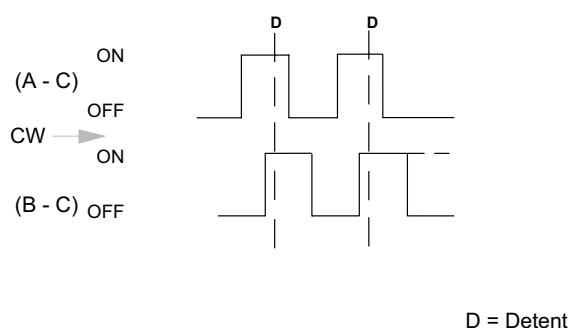
## FEATURES

- 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

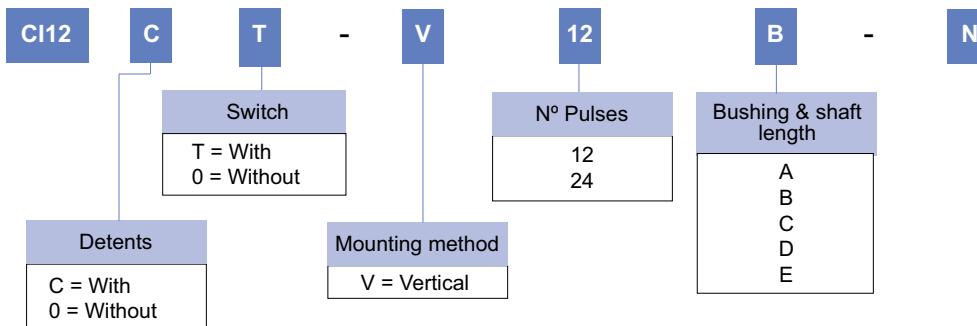
## STANDARD SPECIFICATIONS

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

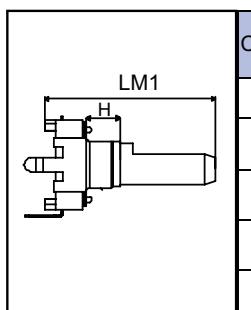


## HOW TO ORDER



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

## BUSHING & SHAFT LENGTH



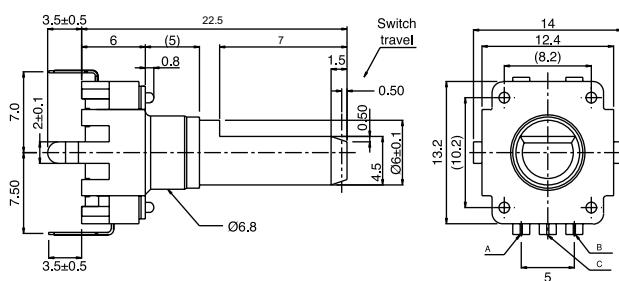
CODE	LM1	H
A	17.5	5
B	20	5
C	22.5	5
D	25	5
E	15	1.6

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

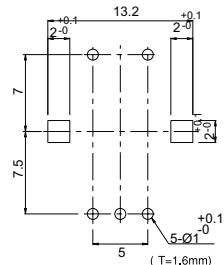
## STANDARD DIMENSIONS

With switch

**CI12CT-V24C-N**

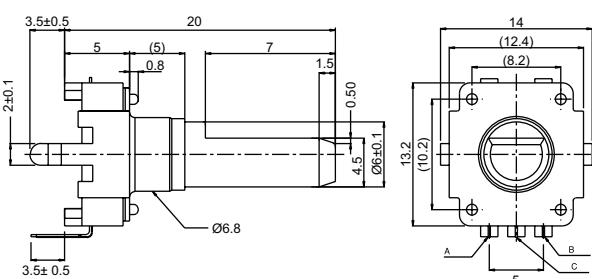


P.C.B. Hole Detail

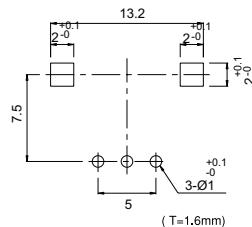


Without switch

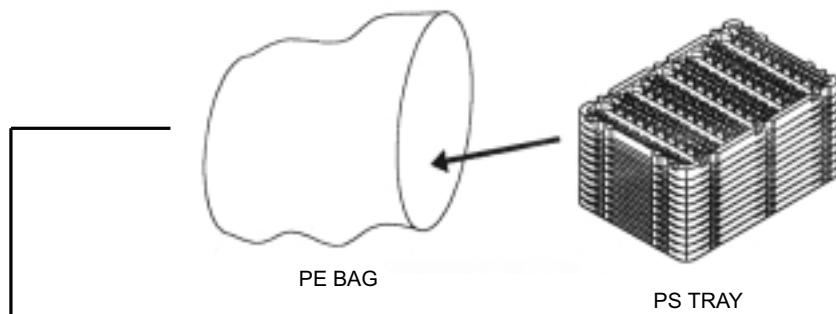
**CI12C0-V12B-N**



P.C.B. Hole Detail

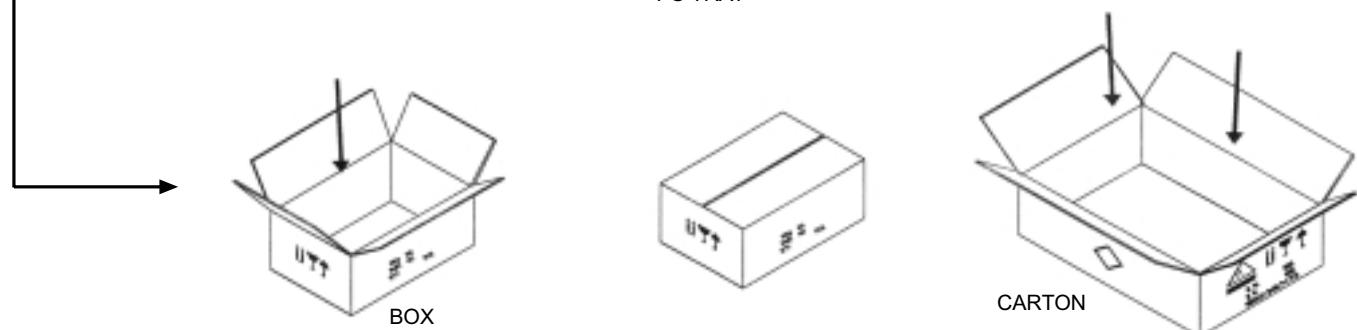


## PACKAGING



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

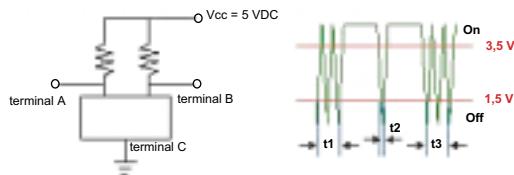
Box dimensions: 35.5 x 24.9 x 15.5 cm  
Carton dimensions: 51.2 x 36.7 x 17 cm



## TEST CIRCUIT DIAGRAM

Measurements shall be made under the following conditions.

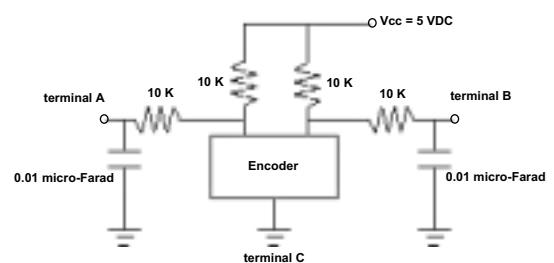
- (1) Shaft rotational speed: 360 degrees/second
- (2) Test circuit as follows:



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
- Mechanical life:	min 30,000 cycles
- Cold:	-40 ± 3°C for 240±10H
- Dry heat:	85 ± 3°C for 240±10H
- Damp heat:	40 ± 2°C 90 to 95% RH for 240±10H

# Mouser Electronics

Authorized Distributor

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Picher:

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