PIHER

CI-12 12mm Incremental Encoder

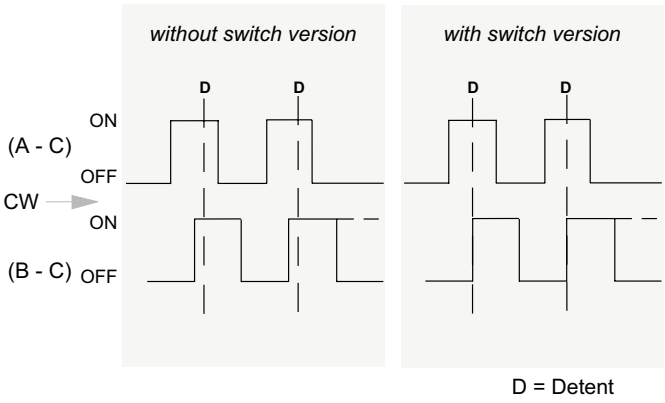
FEATURES

- 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:	-10ºC to +70ºC
Mechanical life (min):	20.000 cycles (with switch)
	30.000 cycles (without switch)
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



D = Detent

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.

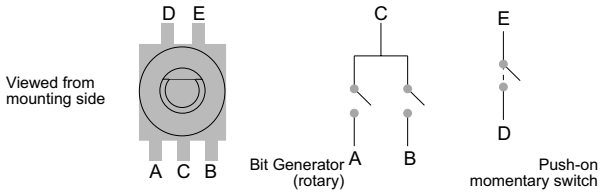
- Multimedia:

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

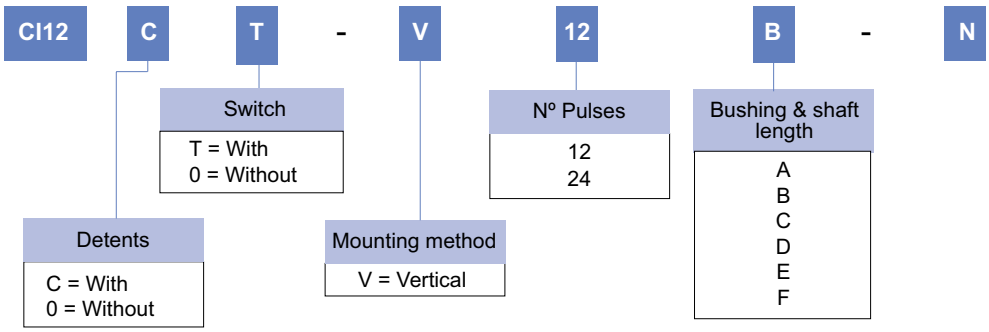
- Professional:

Input/output adjustment for Digital Audio Mixers.

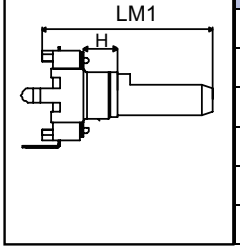
TERMINAL DESIGNATIONS



HOW TO ORDER



BUSHING & SHAFT LENGTH



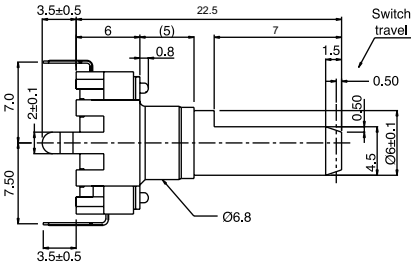
CODE	LM1	H
A	17.5	5
B	20	5
C	22.5	5
D	25	5
E	15	1.6
F	8.35	0

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

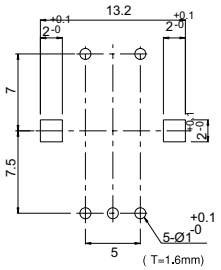
STANDARD DIMENSIONS

With switch

CI12CT-V24C-N

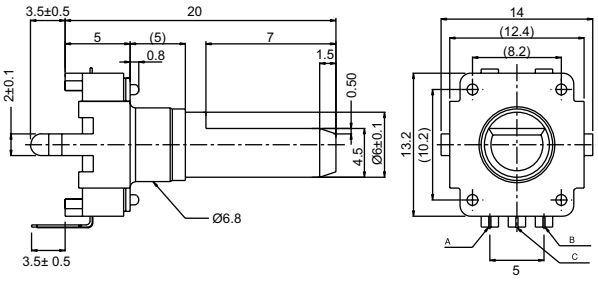


P.C.B. Hole Detail

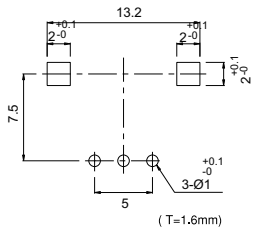


Without switch

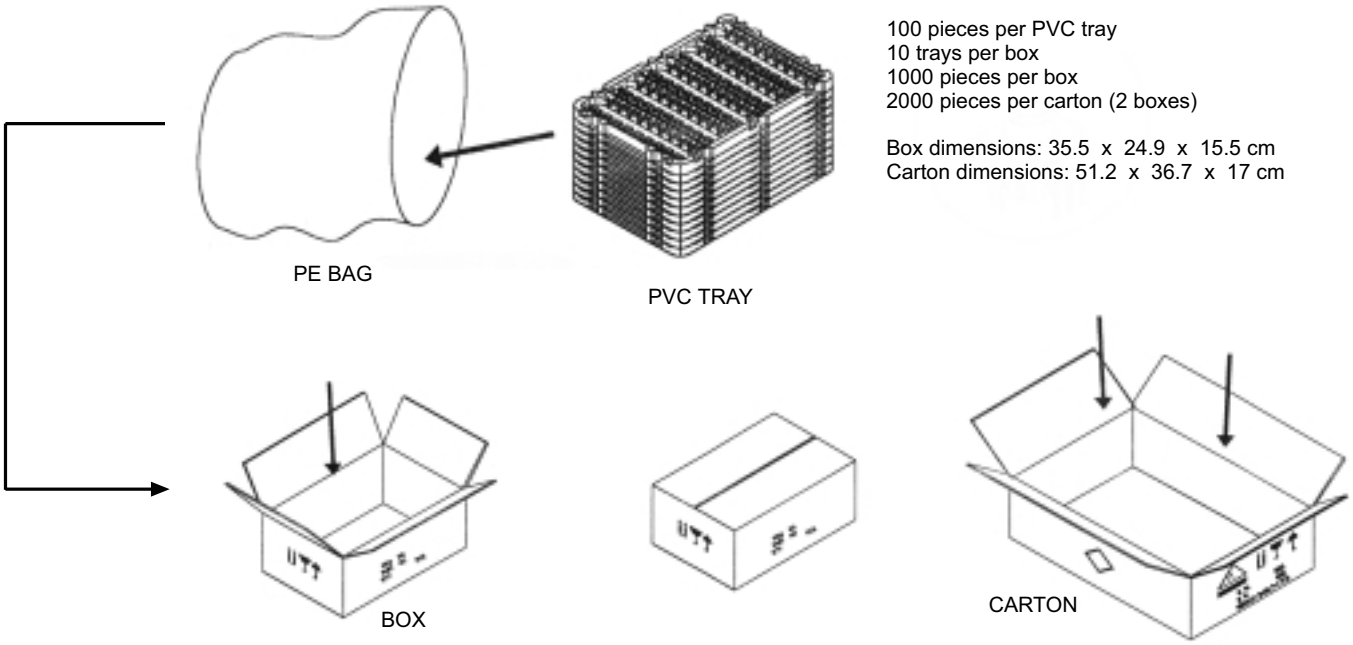
CI12C0-V12B-N



P.C.B. Hole Detail



PACKAGING

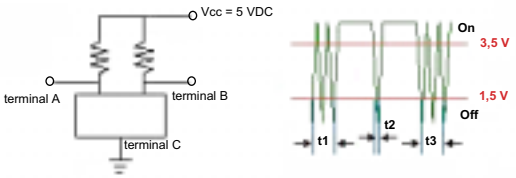


100 pieces per PVC tray
10 trays per box
1000 pieces per box
2000 pieces per carton (2 boxes)

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

TEST CIRCUIT DIAGRAM

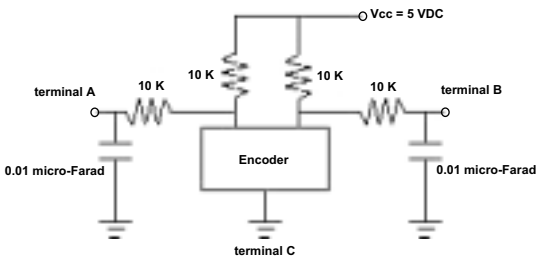
Measurements shall be made under the following conditions.
(1) Shaft rotational speed: 360 degrees/second
(2) Test circuit as follows:



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:	50 VAC for 1 min (Leak current 1 mA)
- Sliding Noise:	t1, t3 ≤ 3 ms, t2 ≤ 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 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:	-10°C to +70°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 20,000 cycles (with switch), min 30,000 cycles (without switch)
- Cold:	-40 ± 3ºC for 240±10H
- Dry heat:	85 ± 3ºC for 240±10H
- Damp heat:	40 ± 2ºC 90 to 95% RH for 240±10H