PIHER

CI-11 11mm Incremental Encoder

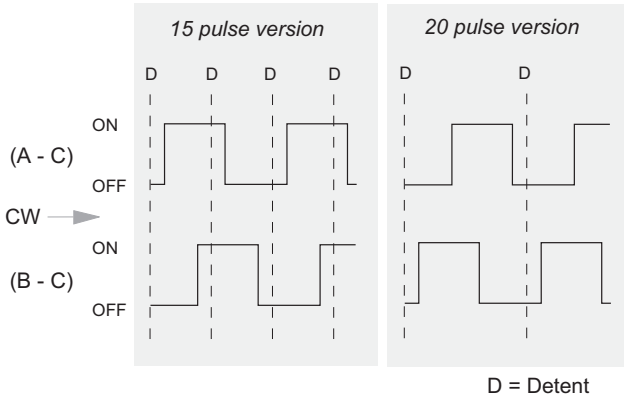
FEATURES

- 2 bit in quadrature code
- Contact type
- Push-on switch (optional)
- Available with or without detents
- Compact design
- Threaded or plain bush options
- Available in vertical mount
- Endless rotation
- 15 or 20 pulses per rev.

STANDARD SPECIFICATIONS

Operating Temperature:	-40ºC to +85ºC
Life (endless rotation):	20.000 cycles
Detent torque:	0.3 to 2 Ncm
Rotational torque (without detents versions)	0.5 Ncm (MAX)
Push on switch:	0.5 mm. travel
Contact Resistance:	100 mΩ Initial (MAX)

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.

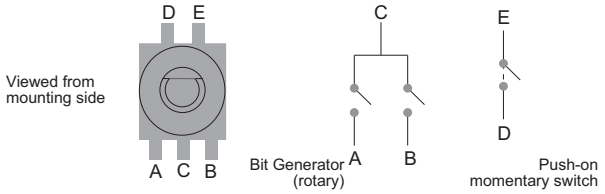
- Multimedia:

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

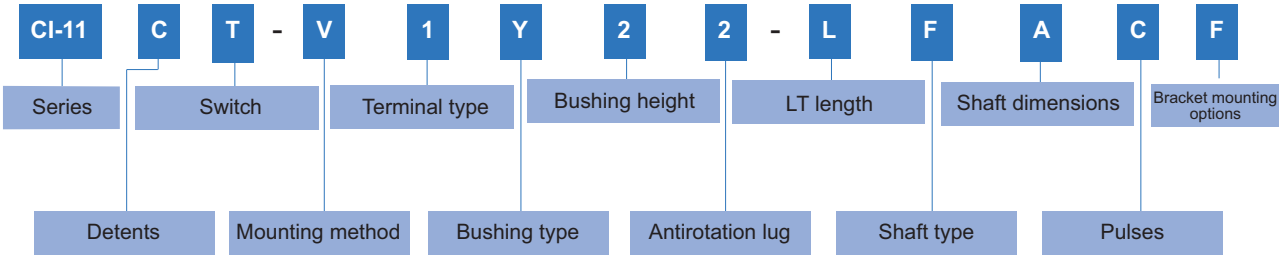
- Professional:

Input/output adjustment for Digital Audio Mixers.

TERMINAL DESIGNATIONS



HOW TO ORDER

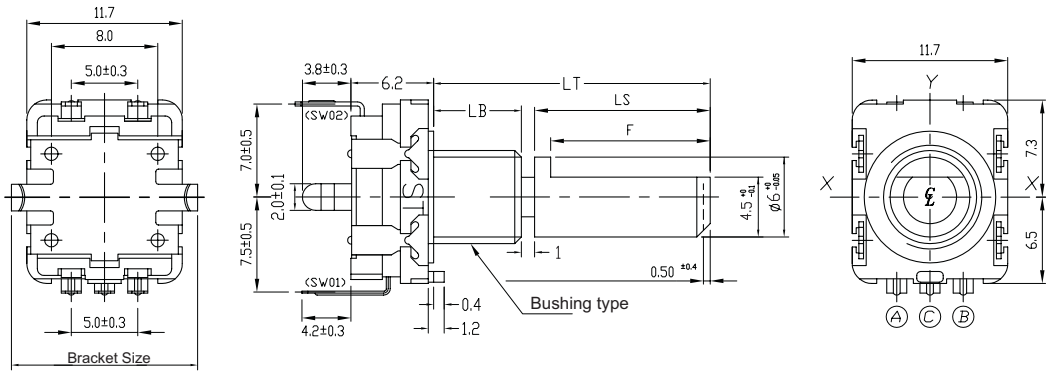


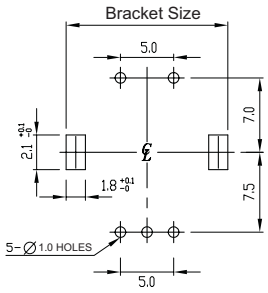
Standard models:
CI-11CT-V1Y22-LFACF (threaded bushing and 0.5mm switch)
CI-11C0-V1Y22-HF4CF (threaded bushing without switch)
CI-11CT-V1N42-LFACF (bushing without thread and 0.5mm switch)
CI-11C0-V1N42-HF4CF (bushing without thread without switch)

*Other configurations upon request

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

STANDARD DIMENSIONS (with switch)

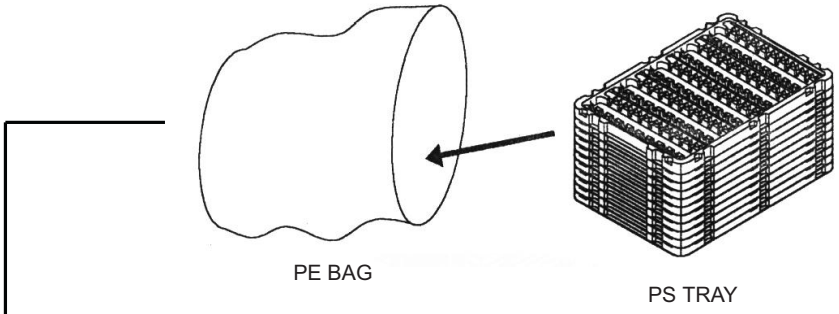




P.C.B. Hole detail

	LT	F	LS	LB
CI-11CT-V1Y22-LFACF	13.7	6.8	8.0	5
CI-11CT-V1N42-LFACF	13.7	6.8	7.7	5

PACKAGING

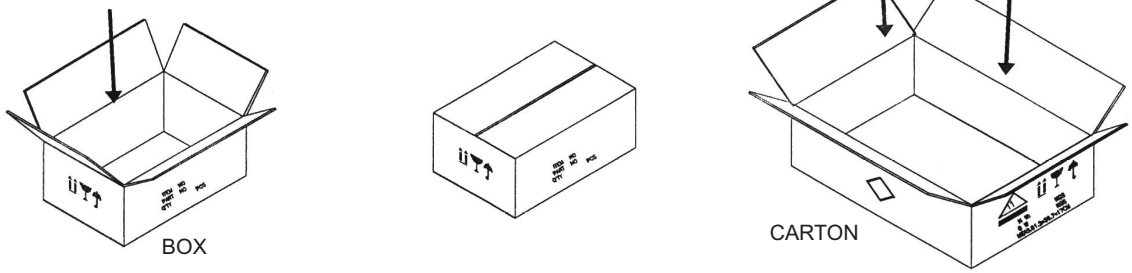


PE BAG

PS TRAY

100 pieces per PVC tray
11 trays per box (top tray is always left empty)
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

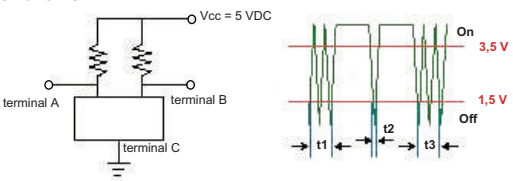


BOX

CARTON

TEST CIRCUIT DIAGRAM

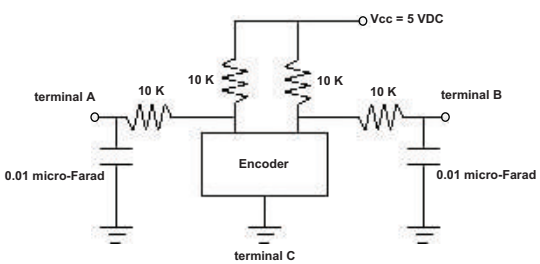
Measurements shall be made under the following conditions.
(1) Shaft rotational speed: 360 degrees/second
(2) Test circuit as follows:



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.)
- Contact Resistance:	100 mΩ (max.) @ initial
- Insulation Resistance:	100 MΩ (min.) @ 250 VDC 1 mA
- Dielectric Strength:	300 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.
- Electrical Life:	20,000 operations

Mechanical

- Number of Detents:	20 (20-pulse encoder), 30 (15-pulse encoder)
- 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:	20 N(2.0 4kgf)

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 20,000 cycles
- Cold:	-20 ± 2ºC for 96H
- Dry heat:	85 ± 2ºC for 96H
- Damp heat:	40 ± 2ºC 90 to 95% RH for 96H