

SPECIFICATIONS (rotary encoder)

Rating: 5VDC 10mA (1mA min.)
 Insulation Resistance: 100 mega-ohms min.
 Dielectric Strength: 300VAC - 1 minute (leak current: 1mA).
 Resolution: 15 or 20 pulses/rev.
 Number of Detent: 20 detents (20 pulse encoder); 30 detents (15 pulse encoder).
 Life: 15,000 (w/o loading).
 Operation Temperature: -30~+70C.
 Detent Torque: 3~20mN.m (with detent).
 Rational Torque: 5mN.m max. (without detent)
 Storage Temperature: -40~+85C.
 Terminal Strength: 2.8N.
 Push-pull Strength of Shaft: 50N - 10s
 RoHS: yes

SPECIFICATIONS (push switch)

Switch Rating (resistant load): 5VDC 10mA (1mA min.)
 Contact Resistance: 100 milli-ohms max.
 Insulation Resistance: 100 mega-ohms min.
 Dielectric Strength : 300VAC/1mA - 1 minute.
 and busing). Leak current: 1mA.
 Contact Arrangement: SPST (momentary contact).
 Switch Travel: 0.5+/-0.4mm.
 Operation Force: 4.5+/-1.5N (450+/-153gf).
 Life: 20,000.
 Chattering: less than 10mS.

SOLDERING

Manual: +300C or less within 3s.

Dip:

-Single-sided copper clad laminated board with thickness of 1.6mm.
 -Flux shall be applied to the board using a bubble foaming type fluxes.
 Flux Specific Gravity: 0.82 or more.
 Preheating Surface Temperature of Board: +100C or less.
 Preheating Time: within 1 minute.
 Soldering Temperature: +260+/-5C
 Immersion Time: within 2~4s.

Figure 1: Output Signal (C.W. rotation)

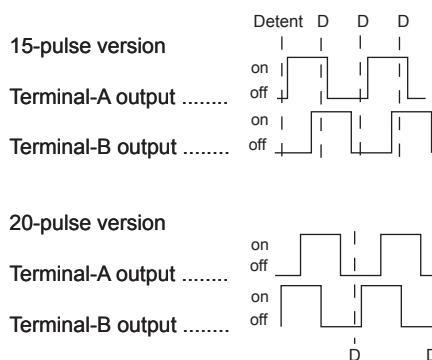


Figure 2: Switching Characteristics

Measurements shall be made under the conditions as follows
 (1) Shaft Rotational Speed: 360 degrees/second
 (2) Test Circuit: As below
 On-Area: the area which the voltage is 3.5V or more
 Off-Area: the area which the voltage is 1.5V or less
 Chattering: $t1 \cdot t3 = 2\text{ms}$ or less
 Bounce: $t2 = 2\text{ms}$ or less

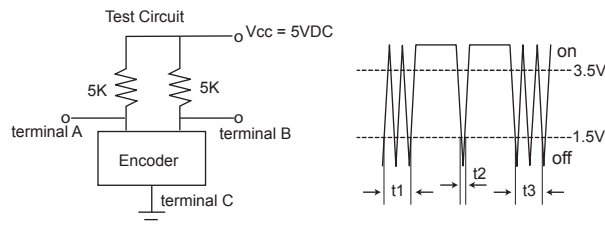


Figure 3: Phase Difference

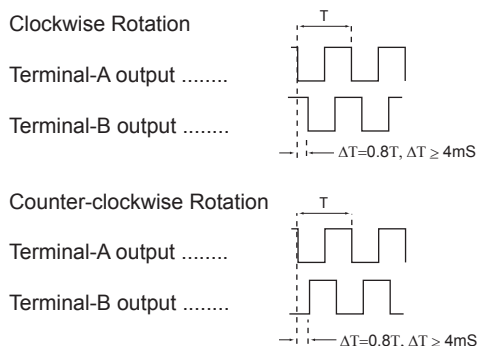
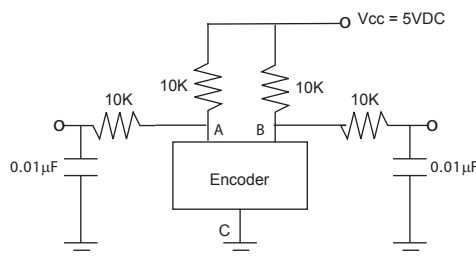


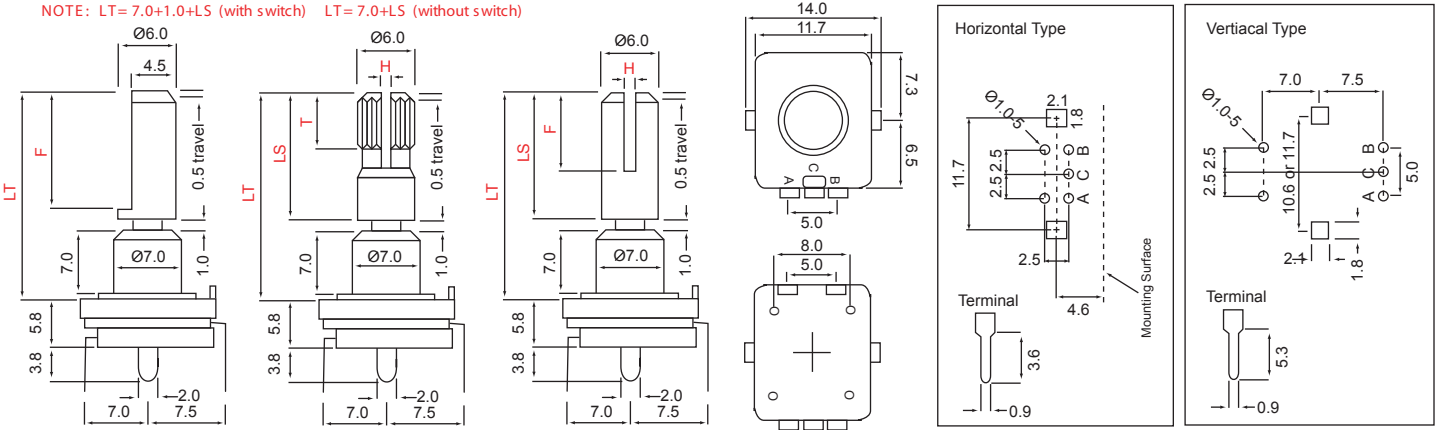
Figure 4: RC Filter Circuit

The R/C filter circuit as shown is recommended in designing of the pulse count process.



RE11 ROTARY ENCODER

NOTE: LT= 7.0+1.0+LS (with switch) LT= 7.0+LS (without switch)



PART NUMBERING FORMAT

RE11 [Detent] [Push Switch] - [Mounting Bracket] [Terminal] [Bushing] 12- [Shaft] [Knob] [Shaft Slot] [Resolution] [Bracket Footing]

Ex: RE11CT-V1Y12-EF2CS

Detent Push Switch
C: Yes T: Yes
None: No None: No

Mounting Bracket		Terminal		Bushing	
V	Vertical	1	Vertical type	Y	M7*0.75 threaded bushing
H	Horizontal	2	Horizontal type	N	Plain bushing

Shaft	
	No switch
Code (LT)	Code (LT)
Q: 11.4	H: 13.7
5: 13.0	K: 15.5
L: 13.7	6: 15.8
F: 14.0	D: 19.0
I: 15.0	C: 20.0
8: 15.8	9: 21.0
B: 16.0	J: 25.0
P: 16.5	
W: 17.0	
U: 17.6	
G: 17.7	
2: 18.5	
Z: 19.0	
A: 20.0	
R: 21.0	
M: 21.5	
E: 24.0	
S: 24.7	
V: 25.4	
N: 26.5	

Knob	
E	Bevel
F	Straight
G	
H	
K	

Shaft Slot			
E and F-type knob	G-type knob	H-type knob	K-type knob
Code (F)	Code (L)	Code (LS, F, H)	Code (LS, T, H)
E: 3.1	3: 10.8	3: 8.0, 7.0, 1.0	3: 9.6, 5.6, 1.0
9: 3.5	1: 12.0	4: 11.0, 9.0, 1.42	6: 10.0, 6.0, 1.0
B: 4.0	2: 13.0	6: 8.0, 6.0, 1.0	7: 12.0, 7.0, 1.0
6: 5.0		7: 9.3, 8.0, 1.42	9: 12.3, 10.0, 1.0
5: 6.0		2: 17.0, 11.0, 1.42	2: 13.0, 11.0, 1.0
A: 6.8		5: 18.0, 11.0, 1.42	1: 17.0, 12.0, 1.0
4: 7.0		9: 20.0, 10.0, 1.42	
7: 8.0			
F: 8.5			
G: 8.85			
1: 9.0			
8: 9.5			
2: 10.0			
3: 12.0			

Resolution
A: 20 pulses/rev.
C: 15 pulses/rev.

Bracket Footing	
D	Horizontal mount
M	Vertical mount
S	Vertical mount

Note: (1) Specific shaft length is available at request. (2) Shaft diameter is 6mm.
Packaging: 100 encoders per tray; 10 trays per box.