

SERIES: ACZ16

DESCRIPTION: mechanical incremental encoder

## ELECTRICAL SPECIFICATIONS

| parameter               | conditions/description                                      |
|-------------------------|-------------------------------------------------------------|
| output waveform         | square wave                                                 |
| output signals          | A, B phase                                                  |
| current consumption     | 0.5 mA                                                      |
| output phase difference | T1, T2, T3, T4 $\geq$ 3.5 ms @ 60 rpm (see output waveform) |
| supply voltage          | 5 V dc max.                                                 |
| output resolution       | 12, 24 ppr                                                  |
| insulation resistance   | 50 V dc, 100 M $\Omega$                                     |
| withstand voltage       | 50 V ac                                                     |

## MECHANICAL SPECIFICATIONS

| parameter         | conditions/description | min | nom | max     | units  |
|-------------------|------------------------|-----|-----|---------|--------|
| shaft load        | axial                  |     |     | 7       | kgf    |
| rotational torque | with detent click      | 50  |     | 130     | gf·cm  |
|                   | without detent click   | 90  |     | 210     | gf·cm  |
| rotational life   |                        |     |     | 100,000 | cycles |

## ENVIRONMENTAL SPECIFICATIONS

| parameter             | conditions/description          | min | nom | max | units |
|-----------------------|---------------------------------|-----|-----|-----|-------|
| operating temperature |                                 | -10 |     | 65  | °C    |
| storage temperature   |                                 | -40 |     | 75  | °C    |
| humidity              |                                 | 85  |     |     | % RH  |
| vibration             | 0.75 mm max. travel for 2 hours | 10  |     | 55  | Hz    |

## PART NUMBER KEY

ACZ16 X BR X E- XX XX X1- XXX

Version:  
"blank" = switch  
N = no switch

Shaft length:  
15, 20, 25

Bushing:  
1 = M7 x 0.75 (H = 5)  
2 = M7 x 0.75 (H = 7)  
4 = smooth (H = 5)  
5 = smooth (H = 7)

Shaft type:  
KQ, F

Mounting orientation:  
A = Horizontal  
D = Vertical

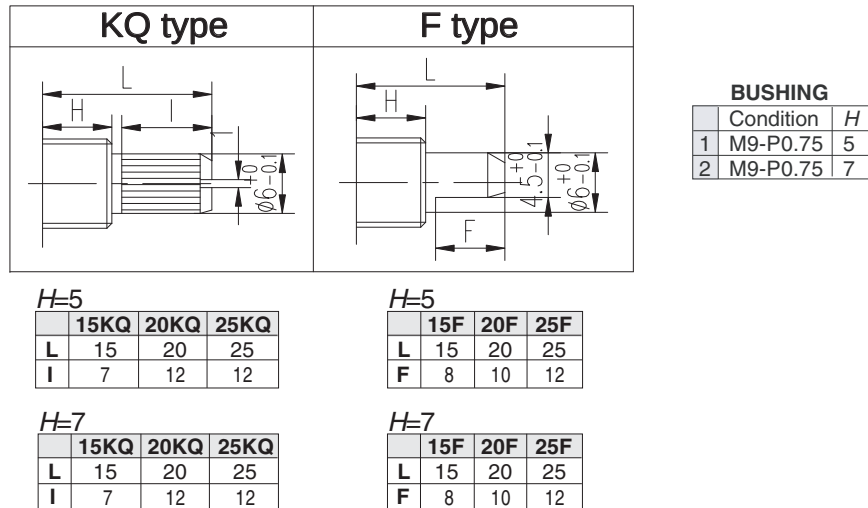
Resolution (ppr):  
12 = 12 ppr, no detent  
12C = 12 ppr, 12 detent  
24 = 24 ppr, no detent  
24C = 24 ppr, 24 detent



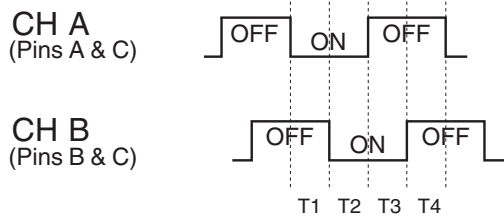
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## SHAFT OPTIONS



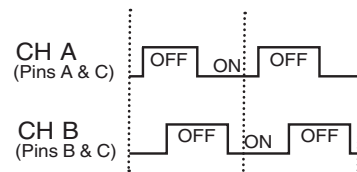
## OUTPUT WAVEFORM



CW direction (@ 60 rpm)

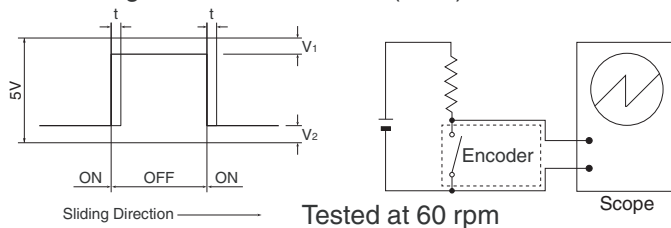
## DETENT POSITIONS

Model 12C & 24C

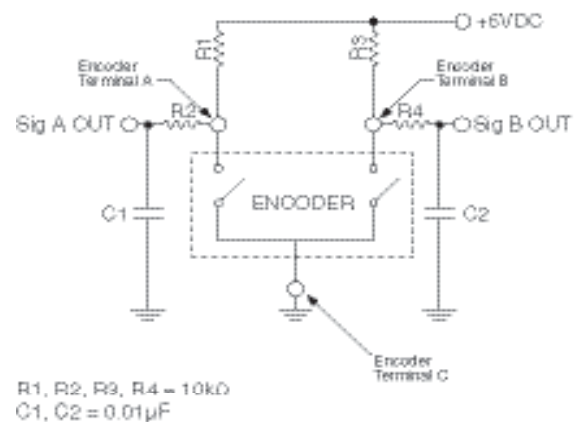


## SLIDING NOISE

t = Masking time to avoid chatter (5mS)  $V_1 = V_2 = 1V$  max.



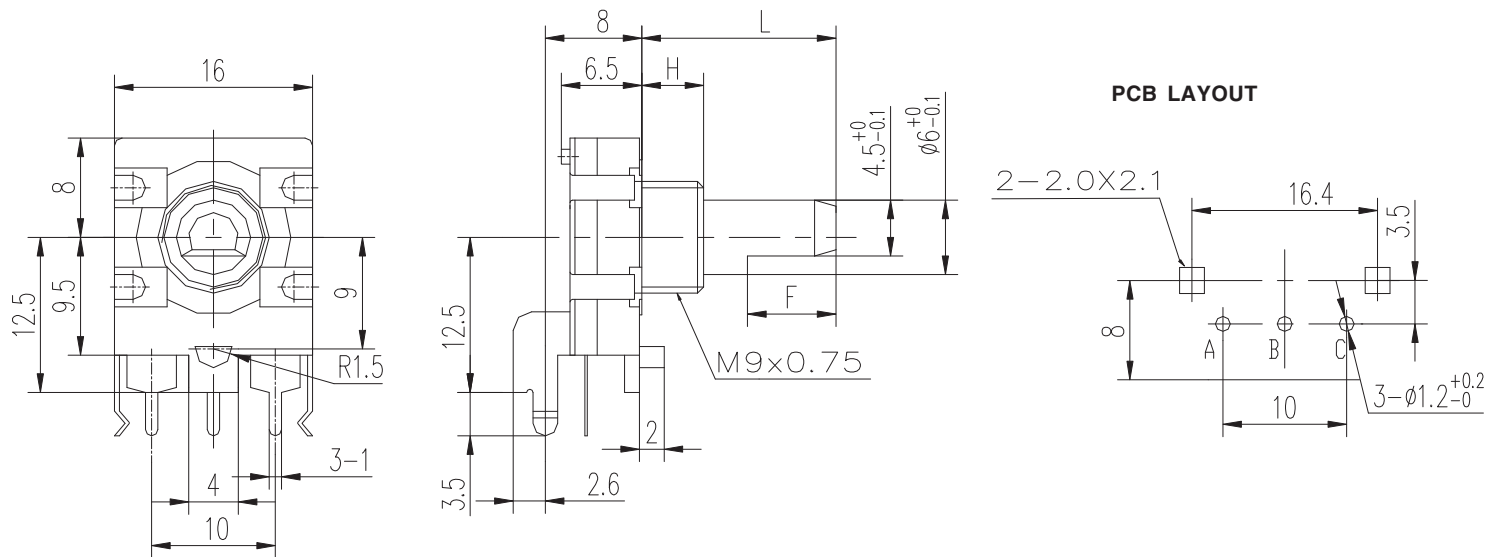
## SUGGESTED FILTER



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## MECHANICAL DRAWING (horizontal)



## MECHANICAL DRAWING (vertical)

