

**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    |

- Notes:
1. It is recommended to use products within 6 months.
  2. For storage conditions, it is recommended to keep away from direct sunlight, corrosive gas, or high humidity conditions.
  3. Use the product as soon as possible once the plastic bag has been unsealed, and reseal the bag if product is not immediately used.
  4. The products are packaged in sealed bags with anti humidity tablets.

**PART NUMBER KEY****ACZ16 X BR X E- XX XX X1- XXX**

Version:  
"blank" = switch (momentary)  
N = no switch

Shaft length:  
15, 20, 25

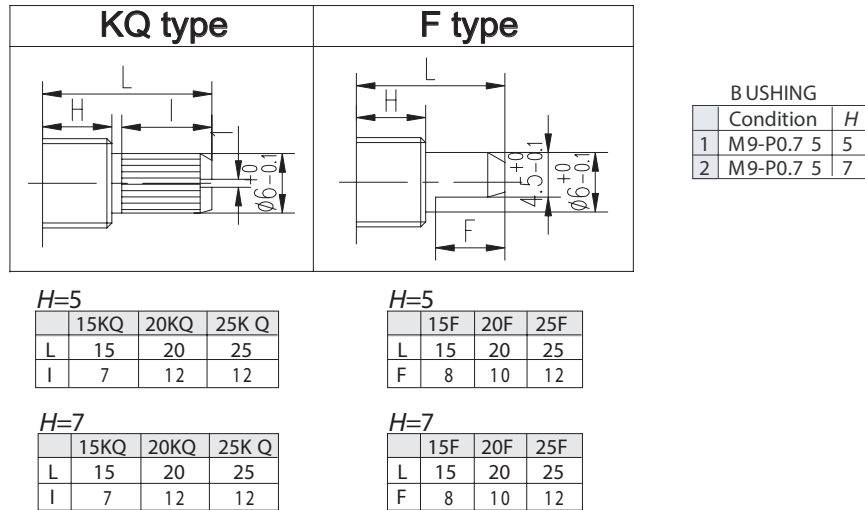
Bushing:  
1 = M9 x 0.75 (H = 5)  
2 = M9 x 0.75 (H = 7)

Shaft  
type:  
KQ, F

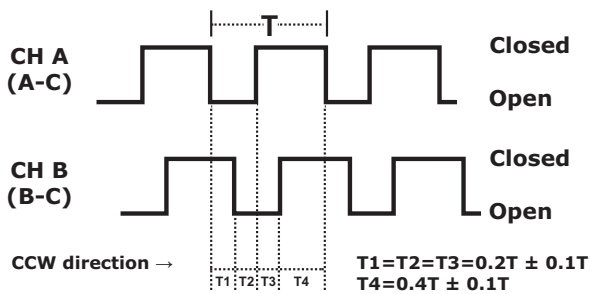
Mounting orientation:  
A = Horizontal  
D = Vertical

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

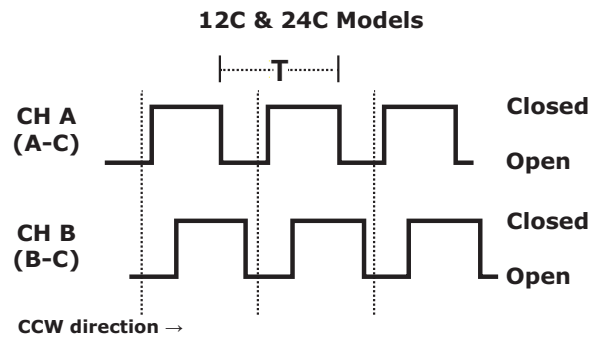
## SHAFT OPTIONS



## OUTPUT WAVEFORM

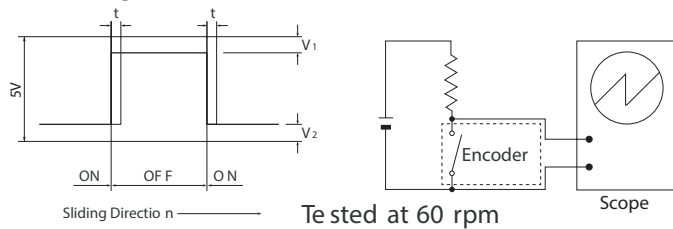


## DETENT POSITIONS

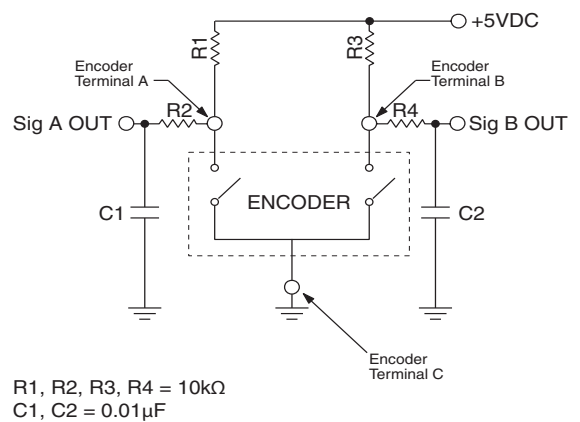


## SLIDING NOISE

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

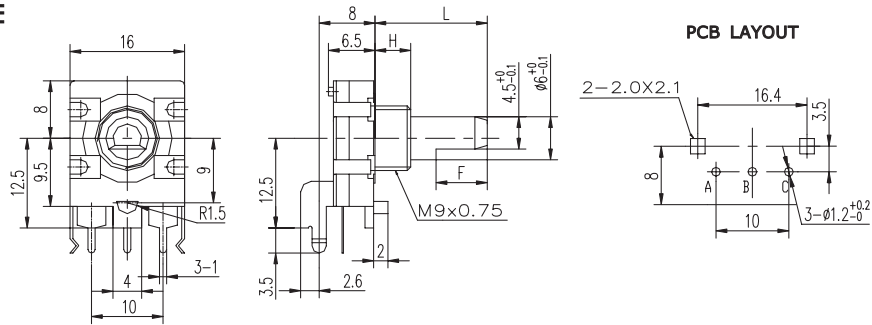


## SUGGESTED FILTER

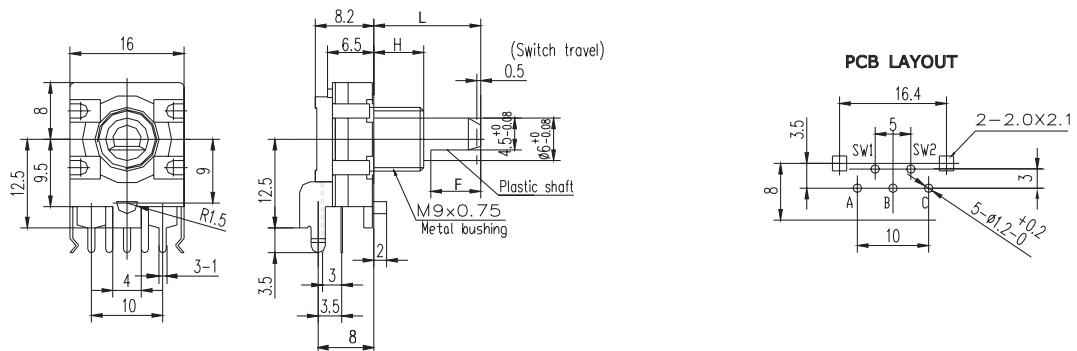


## MECHANICAL DRAWING (horizontal)

ACZ16NBRXE

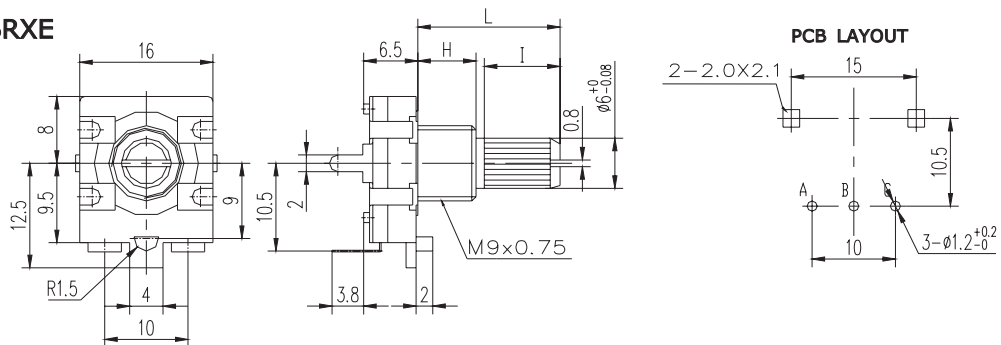


ACZ16BRXE

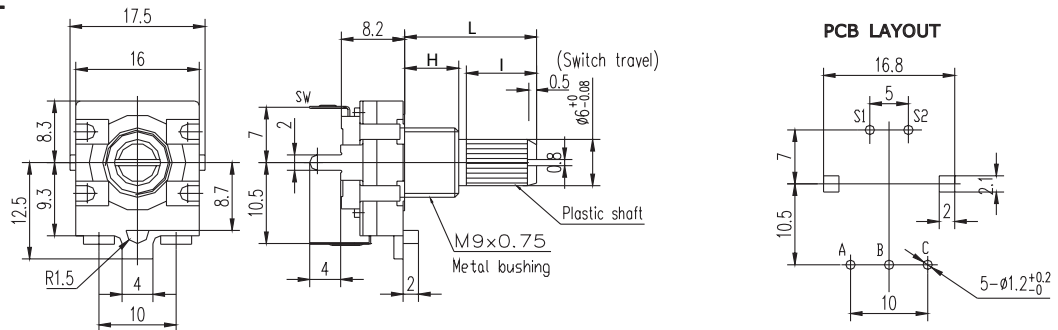


## MECHANICAL DRAWING (vertical)

ACZ16NBRXE



ACZ16BRXE



## REVISION HISTORY

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| rev. | description           | date       |
|------|-----------------------|------------|
| 1.0  | initial release       | 10/30/2009 |
| 1.01 | added storage details | 12/04/2014 |
| 1.02 | brand update          | 10/04/2019 |
| 1.03 | updated datasheet     | 06/15/2020 |
| 1.04 | updated drawings      | 07/14/2020 |

The revision history provided is for informational purposes only and is believed to be accurate.

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