

Commercial Miniature 9mm Encoders

Features

- Miniature 9mm style
- 2 bit quadrature (Graycode)
- Optional momentary switch
- Continuous rotation
- Durable metal shaft
- Available with 16 or 20 detents
- RoHS compliant



Electrical and Mechanical Specifications

Encoder Ratings :

Contact Resistance
1Ω maximum

Voltage Rating (each channel)
12 VDC @ 10 mA maximum.
5 VDC @ 1 mA minimum.

Phase Difference (FIG.1)
T1,T2,T3,T4 —2 milliseconds min for 20 pulse encoder.
- 8 milliseconds min for 8 pulse encoder.

Contact Bounce / Chatter (FIG.3)
t1, t2, t3 - 3 milliseconds max.

Detent Points
16 or 20 detents available

Rotational Life
50,000 cycles

Resolution
8 or 20 pulses in 360°

Insulation Resistance
100 megohms between all terminals & bushing at 250 VDC

Temperature Ratings
Operation: - 30°C to +70°C

Solderability

Flux for 5 - 10 sec., then dip into a solder bath at 260 ±5°C for 3 sec.

Pull and Thrust on Shaft

Withstand a pushing or pulling force of 10 kg-f static load applied in axial direction for 10 ±1 sec. without physical damage or electrical degradation.

Momentary SPST Switch Ratings :

Switch Contact Resistance
100 mΩ maximum initial, 200mΩ after life cycles

Switch Rating
16 VDC @ 10mA min. to 0.5A max.

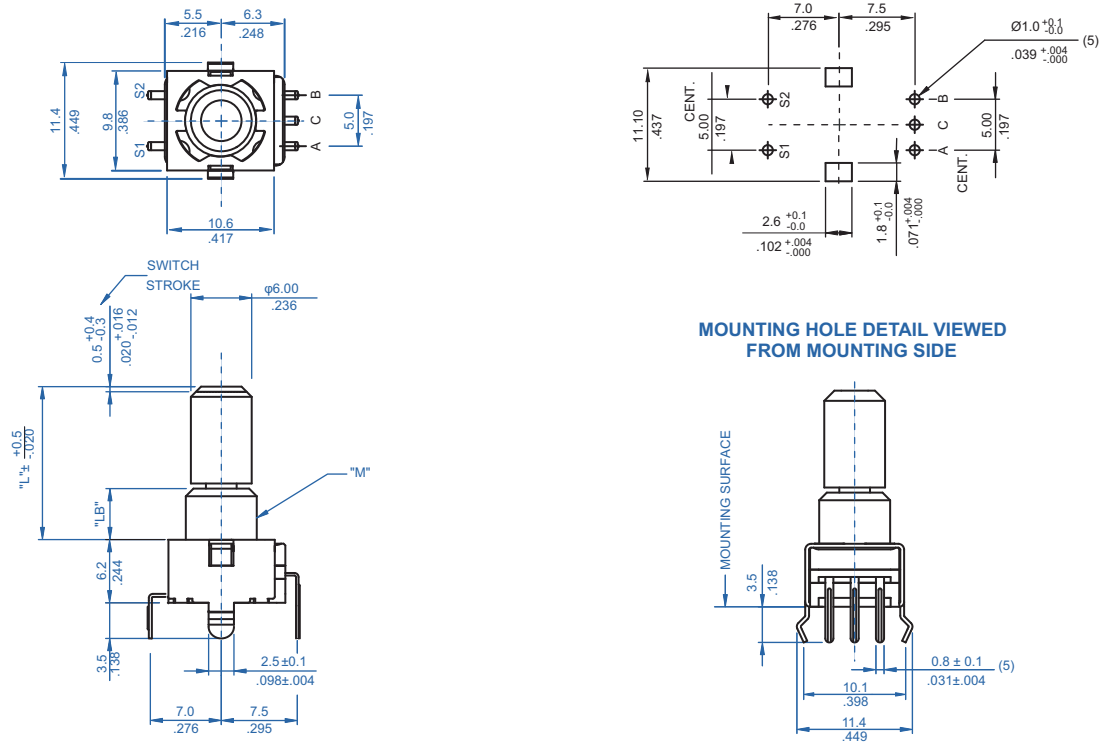
Switch Bounce
5 milliseconds maximum

Switch Operating Force
600 ±300 grams (21 ±11oz) for 0.5mm (.020") travel

Switch Life
100,000 operations for 0.5mm (.020") travel

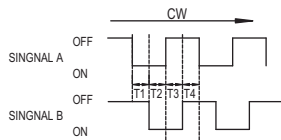
Switch Travel
0.5mm (.020")

TYPE MC-290V Typical 2-Bit Encoder With Momentary Switch, Shaft Perpendicular to PC Board

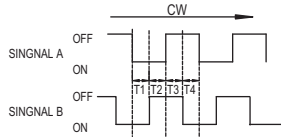


DIMENSION: $\frac{mm}{inch}$

20 PPR OUTPUT SIGNAL (FIG.1.1)

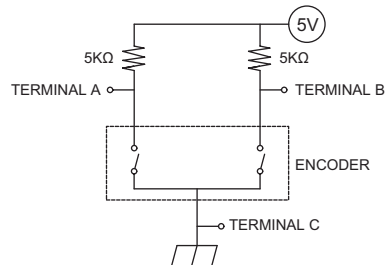


8 PPR OUTPUT SIGNAL (FIG.1.2)

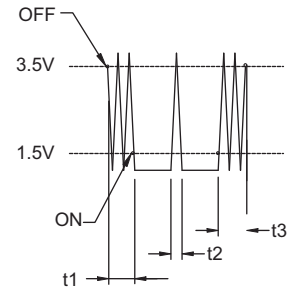


PHASE DIFFERENCE

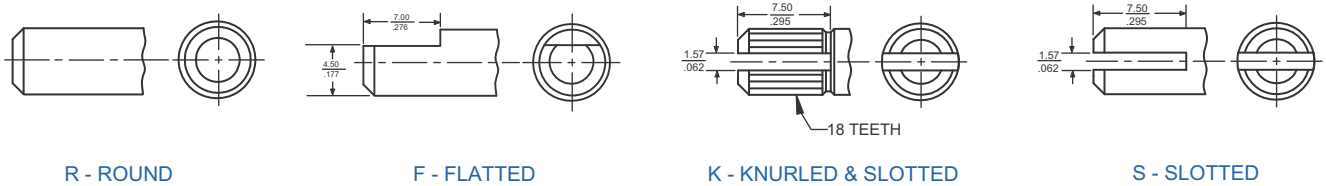
TYPICAL CIRCUIT (FIG.2)



BOUNCE / CHATTER (FIG.3)



Shaft Trim



DIMENSION: $\frac{mm}{inch}$

Ordering Information



Output Combinations :
 8 PPR with 0 or 16 Detents
 20 PPR with 0 or 20 Detents

Consult CTS for other available options not listed