

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

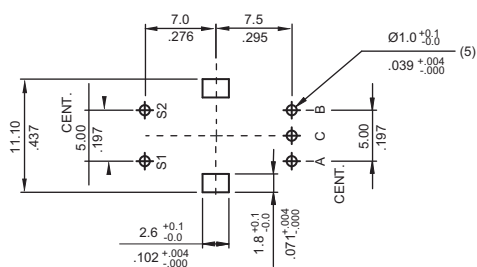
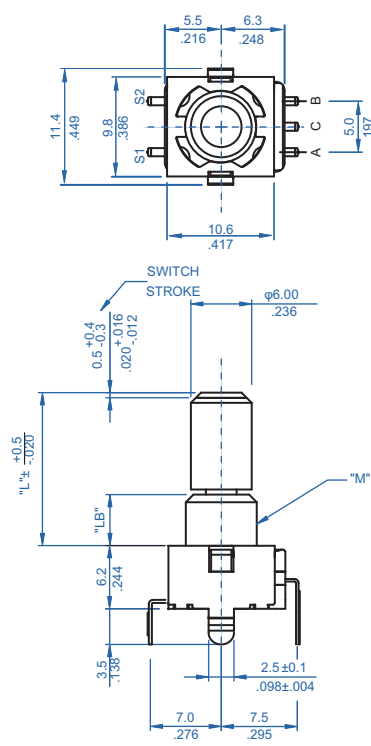
Switch Life

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

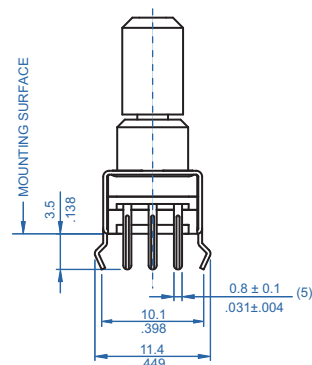
Switch Travel

0.5mm (.020")

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

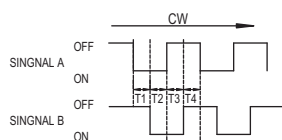


**MOUNTING HOLE DETAIL VIEWED
FROM MOUNTING SIDE**

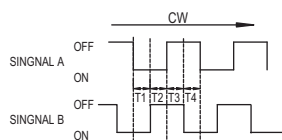


DIMENSION: $\frac{\text{mm}}{\text{inch}}$

20 PPR OUTPUT SIGNAL (FIG.1.1)

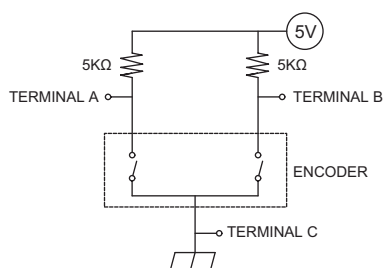


8 PPR OUTPUT SIGNAL (FIG.1.2)

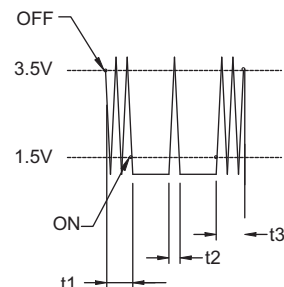


PHASE DIFFERENCE

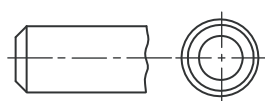
TYPICAL CIRCUIT (FIG.2)



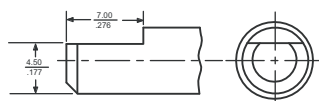
BOUNCE / CHATTER (FIG.3)



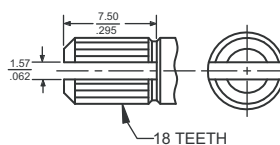
Shaft Trim



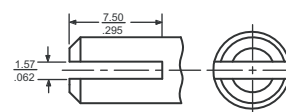
R - ROUND



F - FLATTED



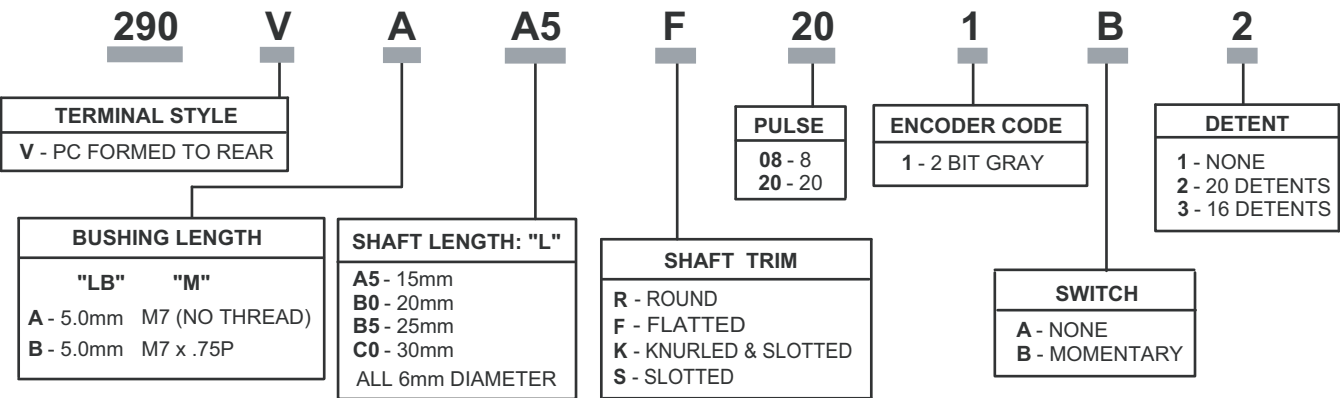
K - KNURLED & SLOTTED



S - SLOTTED

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

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