9 mm Encoder

EN09 Series

OBSOLETE

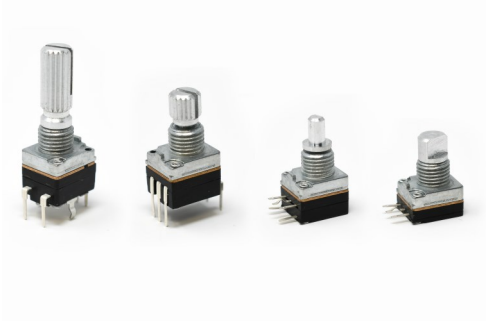
TT Electronics PRO AUDIO

TT Electronics

Features:

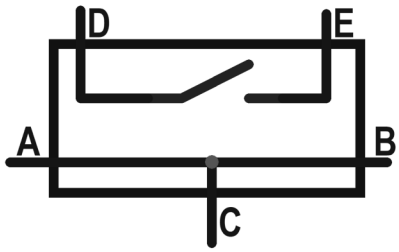
- Compact design
- 360° continuous Rotation
- Momentary Push switch option
- Switch life 20,000 cycles minimum
- Vertical and horizontal mount versions

RoHS compliant



Description:

9mm Encoder with push switch option. This small form factor encoder is a good fit for various small electronic applications such as frequency modulation, volume adjustment, and function switching.



Applications:

- Volume control
- Function Selection
- Small Electronic devices
- Audio and radio equipment
- Walkie-Talkies
- Communication equipment

Electrical Characteristics

T_A = 25°C unless otherwise noted

Output	10 Pulse/360°
Rated Power	10 mA / 5 Vdc
Phase difference at 60 RPM	3.5 ms minimum
Sliding Noise	2.0 ms maximum
Insulation Resistance	100M Ω 1 minute at 250 Vdc / 1mA
Dielectric Breakdown Voltage	300 VAC / 1mA for 1minute

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Encoder Characteristics

T_A = 25°C unless otherwise noted

Rotation	360 ° continuous
Detents per Rotation	20 Detents
Detent Torque	50-300 gf.cm (5 -30 mN.m)
Rotational Life	30,000 cycles minimum

Switch Characteristics

T_A = 25°C unless otherwise noted

Rated Power	5 Vdc 10 mA
Operating Force	600—1200 gf (6-12 N)
Contact Bounce	2.0 ms maximum
Switch Life	20,000 cycles minimum

Environmental Characteristics

T_A = 25°C unless otherwise noted

IP Rating	IP 40
Wave Soldering	Wave/Reflow Soldering 260°C maximum for 1-3 seconds
Hand Soldering	Hand Soldering 350°C maximum for 3 seconds
Operating Temperature Range	-40 °C to +85 °C
RoHS	Please refer to TT Electronics website
REACH	Please refer to TT Electronics website

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EN09 Series OBSOLETE

Ordering Info

EN09	V	10	20	7	S	FS	010

Part Family

Terminal Config

V - Vertical
H - Horizontal
B - Vertical with Bracket

Pulses/360°

10 - 10 pulses

Detents/ Rotation

20 - 20/360°

Bushing - D

5 - 5mm
7 - 7mm
15 - 15mm

Switch Option

N - No Switch
S - Switch

Shaft Style

FW - Metal Flatted Shaft - Wide
FS - Metal Flatted Shaft - Skinny
KW - Knurled Metal Shaft - Wide
KS - Knurled Metal Shaft - Skinny

Shaft Length

See Shaft Length Table

Order Code	L(a) - Shaft Length (Feature Length) Units: mm	Shaft Style
120 175 200 225	12 (4.5) 17.5 (9.5) 20 (12) 22.5 (12)	KW
085 115 140	8.5(3) 11.5 (5) 14 (7)	KS
010 012 015 018 020	10 (3) 12 (5) 15 (7) 18 (8) 20 (12)	FW
095 012 015	9.5 (3) 12 (5) 15 (7.5)	FS

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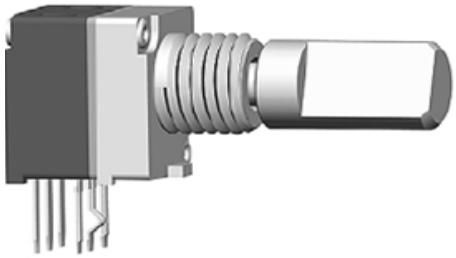
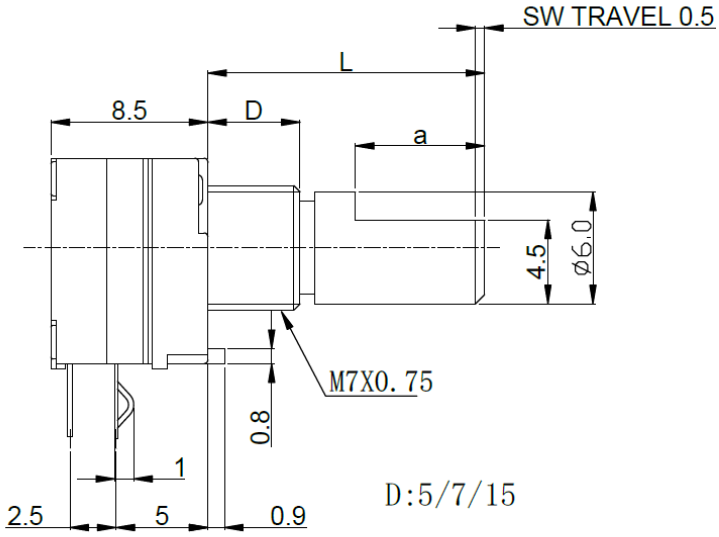
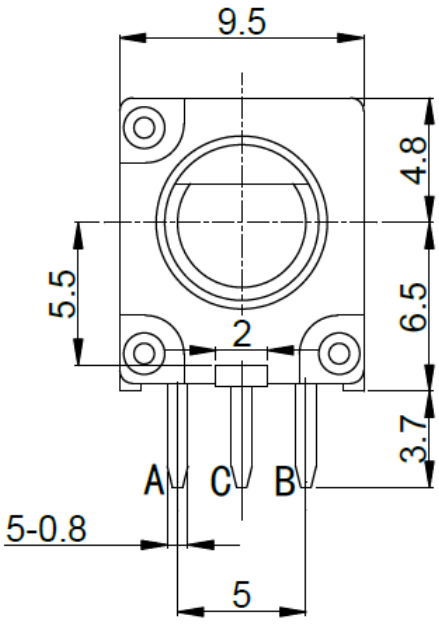
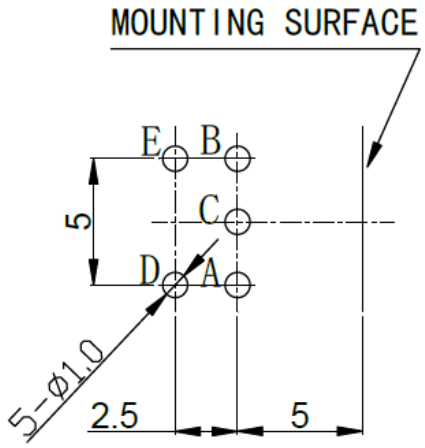
Outline Drawings

H Terminal w/Switch









P.C.B MOUNTING HOLES DETAIL

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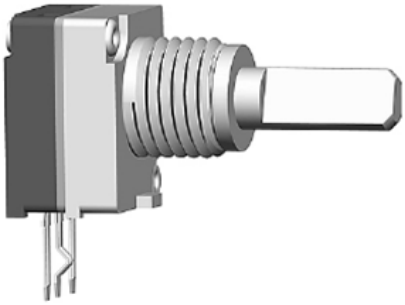
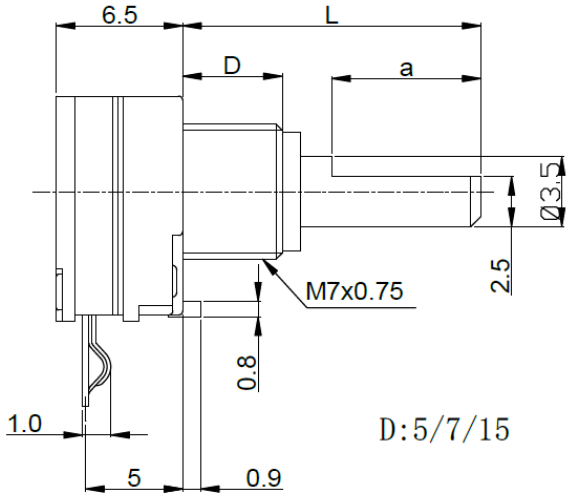
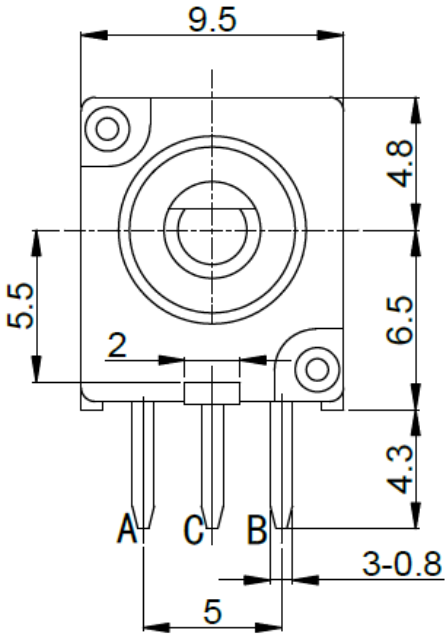
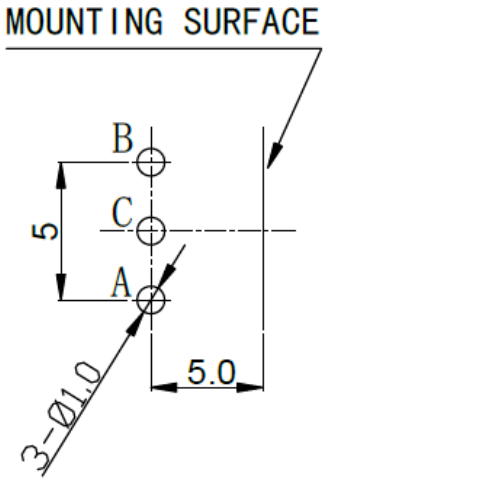
Outline Drawings

H Terminal w/o Switch









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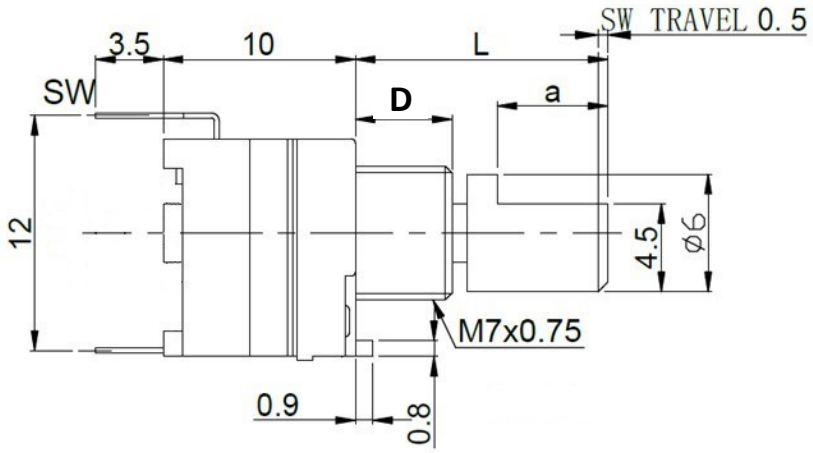
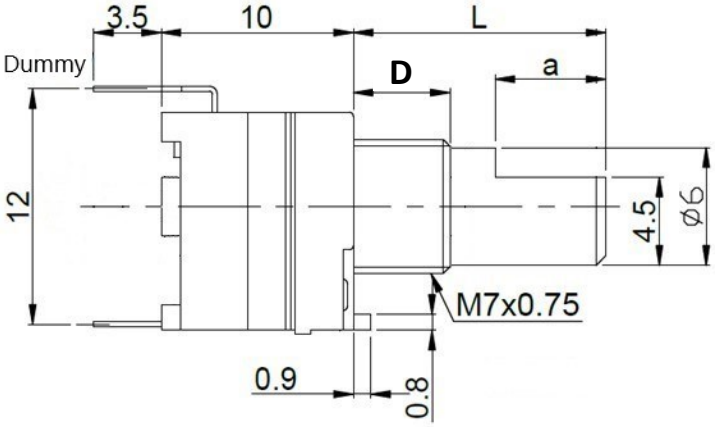
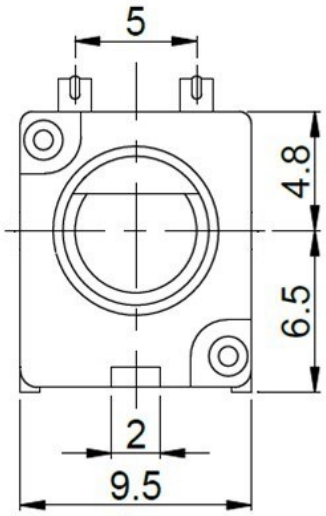
Outline Drawings

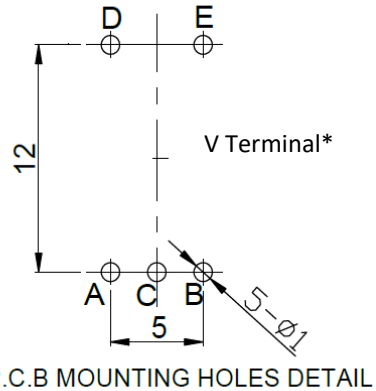
V Terminal



w/o Switch







P.C.B MOUNTING HOLES DETAIL

* PCB layout is same with or without switch. Terminals D and E are dummy terminals on units without switch.

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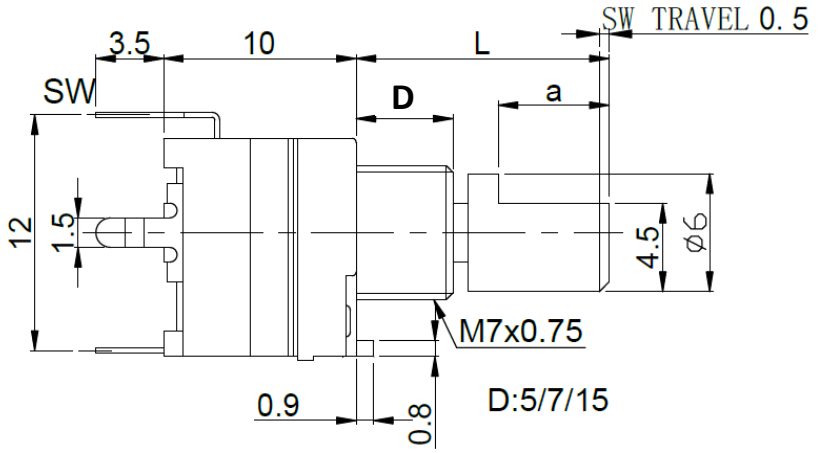
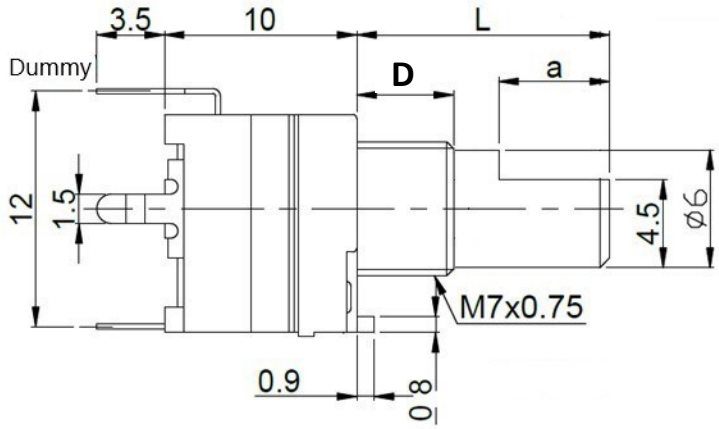
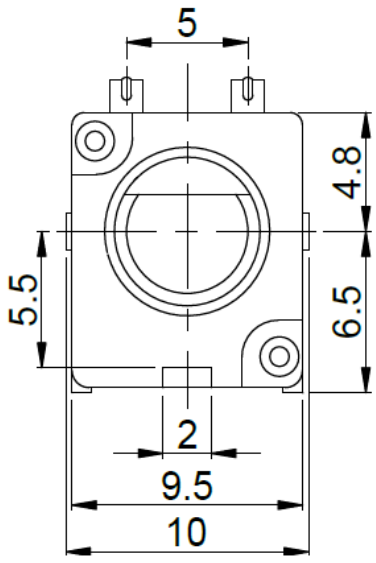
Outline Drawings

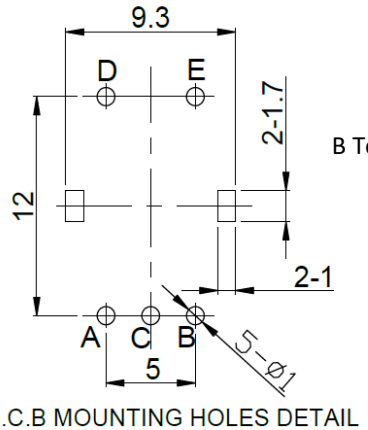
B Terminal



w/o Switch







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B Terminal*

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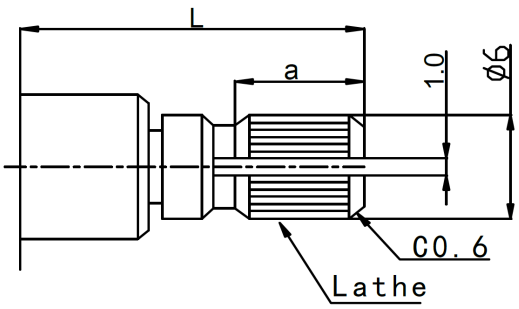
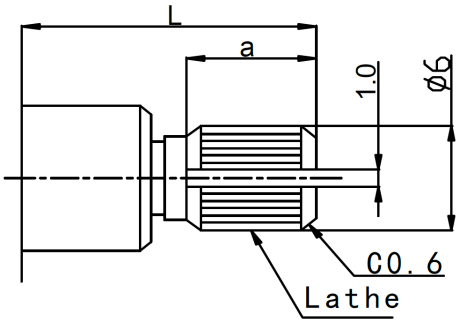
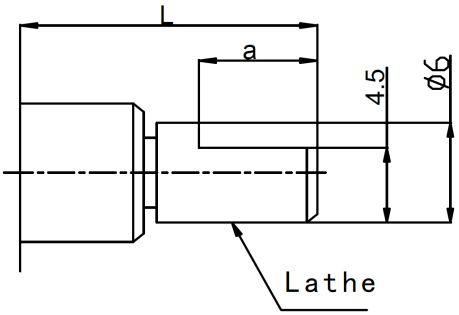
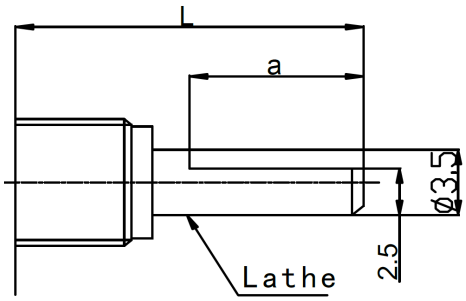
Shaft Style Table

Shaft Style	Order Code - L(a) Units: mm
KW 	120 - 12 (4.5) 175 - 17.5 (9.5) 200 - 20 (12) 225 - 22.5 (12)
KS 	085 - 8.5 (3) 115 - 11.5 (5) 140 - 14 (7)
FW 	010 - 10 (3) 012 - 12 (5) 015 - 15 (7) 018 - 18 (8) 020 - 20 (12)
FS 	095 - 9.5 (3) 012 - 12 (5) 015 - 15 (7.5)

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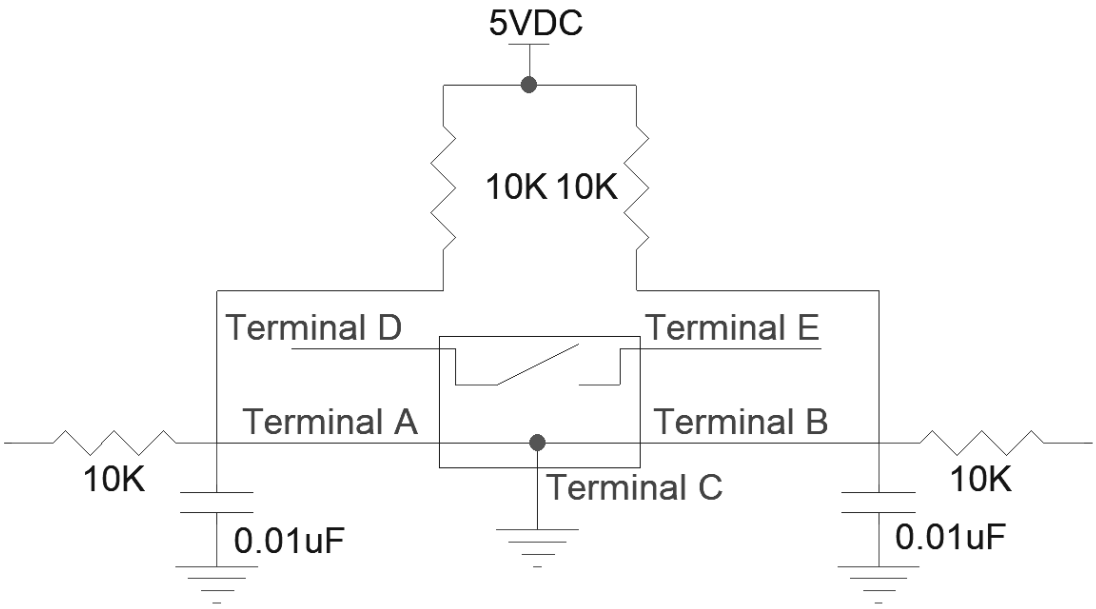
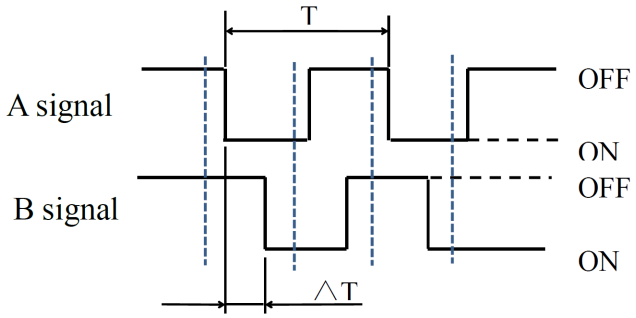
Recommended Filter Schematic



Output Phase shift



Phase difference

Packaging

Standard Packaging	N/A
Included Hardware	None

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