

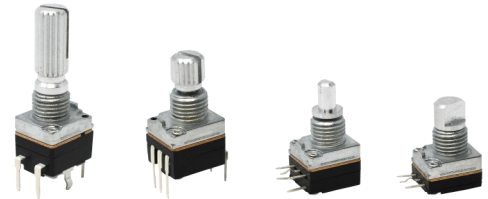
9 mm Encoder

EN09 Series



Features:

- Compact design
- 360° continuous rotation
- Momentary push switch option
- Switch life 30,000 cycles minimum
- Vertical and horizontal mount versions

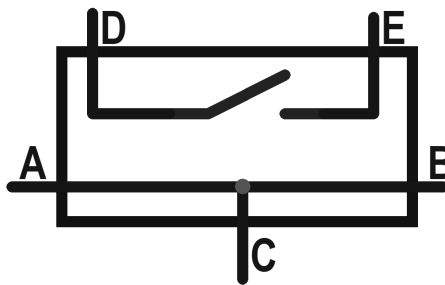


Description:

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



3D Model

To view 3D model:

- 1) Enable 3D content
- 2) Click and drag below



If unable to view 3D content, [download and save](#) this PDF to your computer and open it in Adobe Acrobat Reader.

Electrical Characteristics

$T_A = 25^\circ\text{C}$ 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	100 M Ω 1 minute at 250 Vdc / 1mA
Dielectric Breakdown Voltage	300 VAC / 1mA for 1 minute

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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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	20,000 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	30,000 cycles minimum

Environmental Characteristics

T_A = 25°C unless otherwise noted

IP Rating	IP 40
Wave Soldering	N/A
Hand Soldering	N/A
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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Ordering Info

EN09	V	10	20	07	S	FS	010
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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

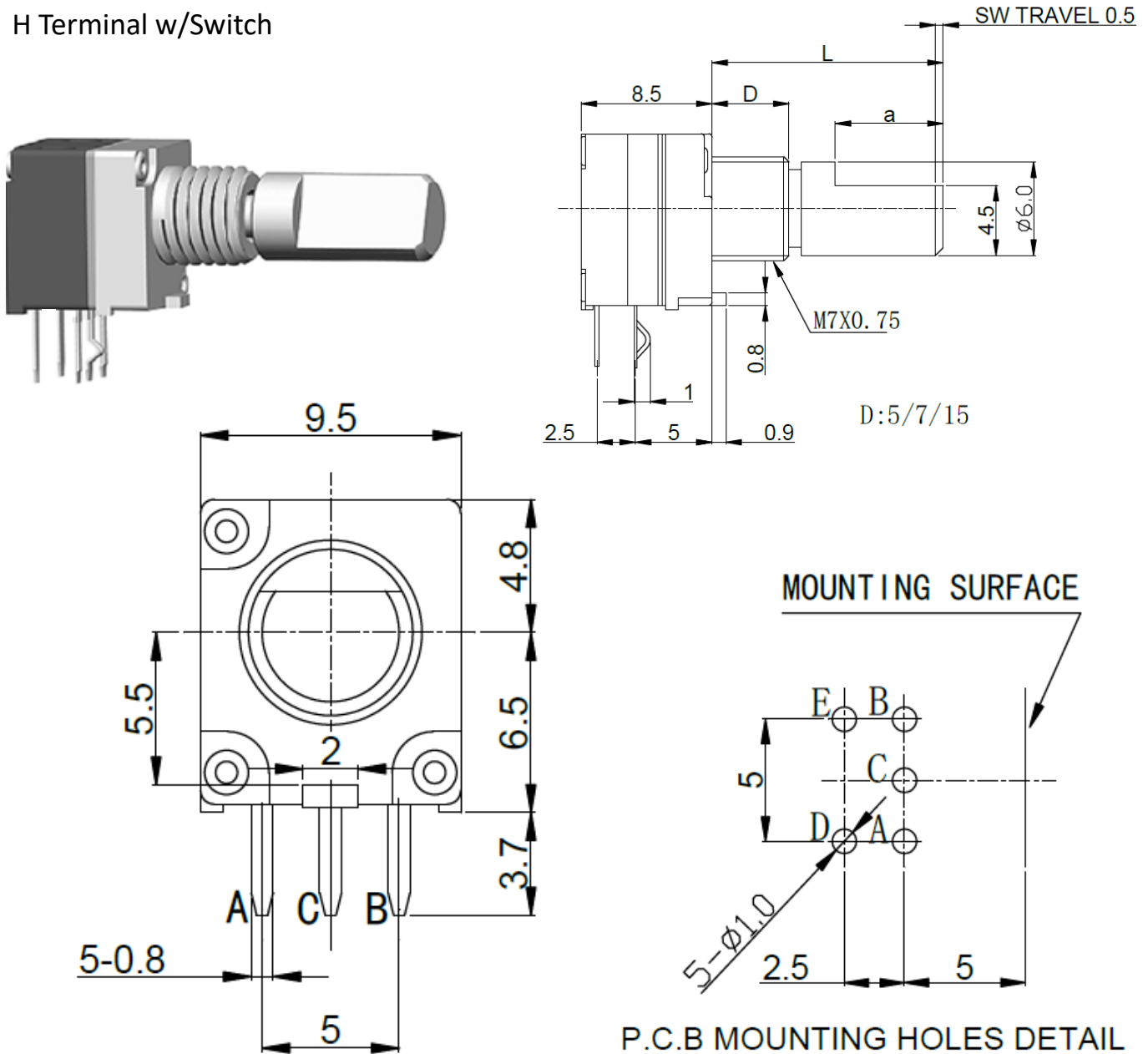
Order Code	L(a) - Shaft Length (Feature Length) Units: mm	Shaft Style
120 175 200 225	12 (4.5) 17.5 (9.5) 20 (12) 22.5 (12)	KW
085 115 140	8.5(3) 11.5 (5) 14 (7)	KS
010 012 015 018 020	10 (3) 12 (5) 15 (7) 18 (8) 20 (12)	FW
095 012 015	9.5 (3) 12 (5) 15 (7.5)	FS

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Outline Drawings

H Terminal w/Switch

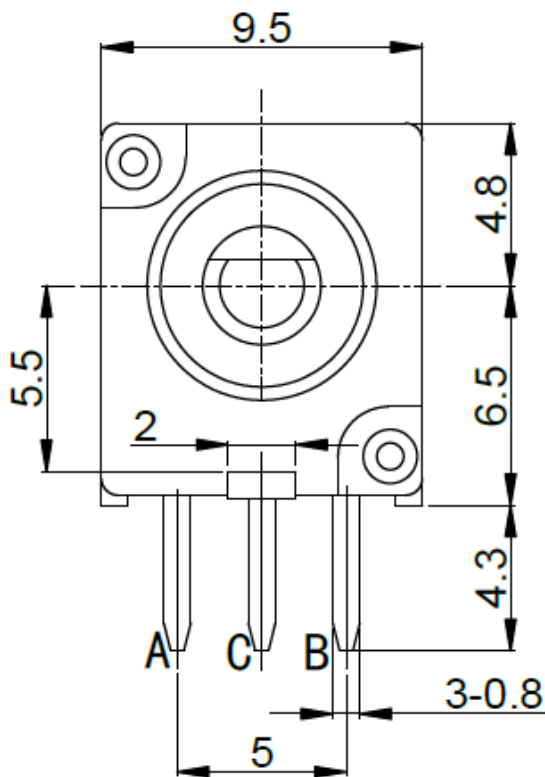
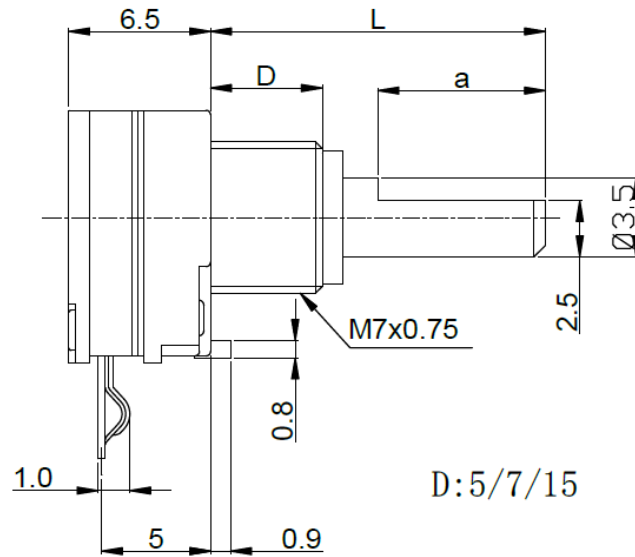
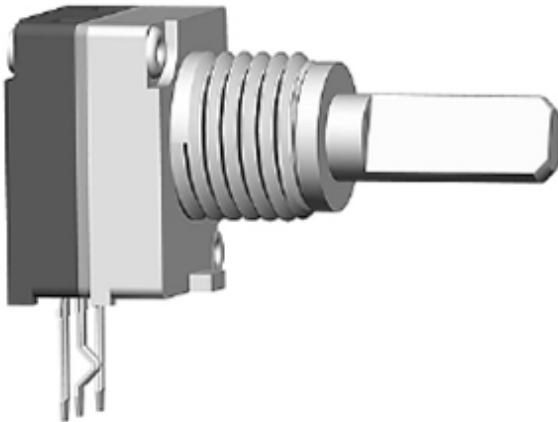


9 mm Encoder

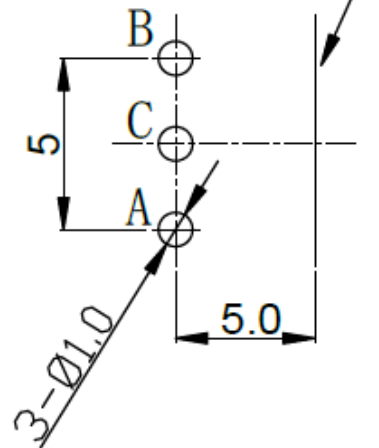
EN09 Series

Outline Drawings

H Terminal w/o Switch



MOUNTING SURFACE



P.C.B MOUNTING HOLES DETAIL

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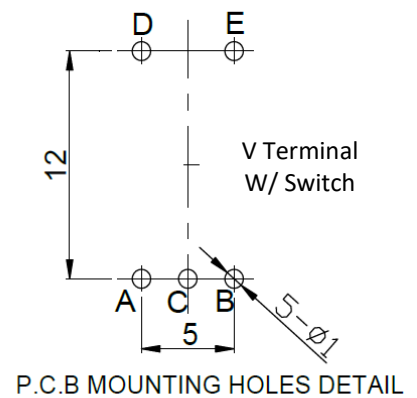
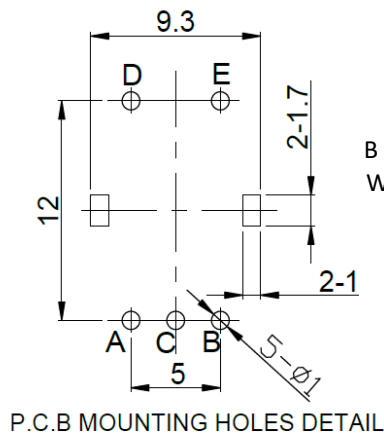
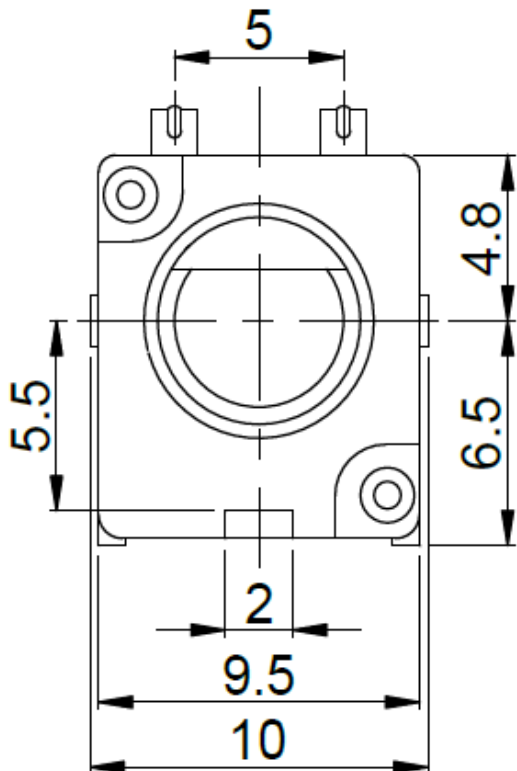
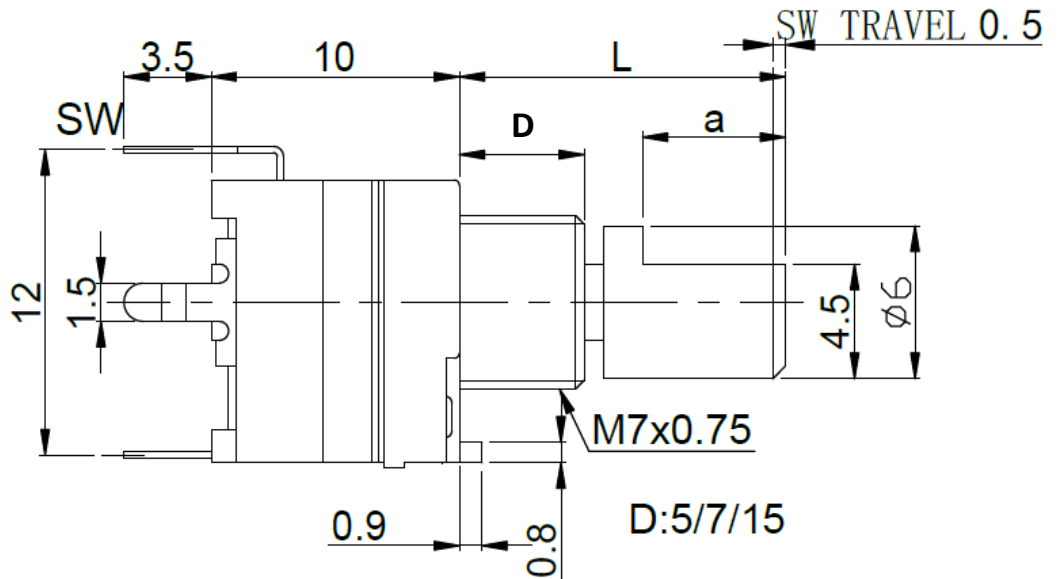
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Outline Drawings

B Terminal W/Switch



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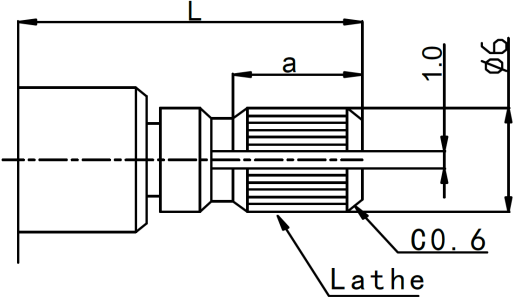
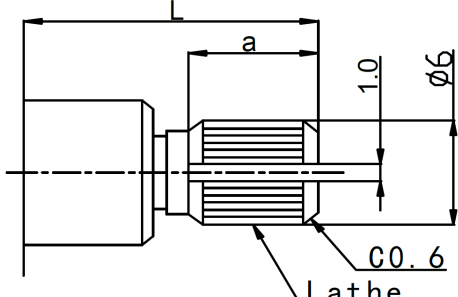
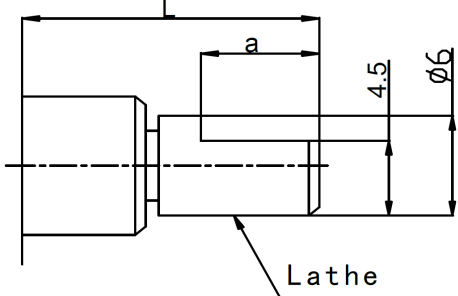
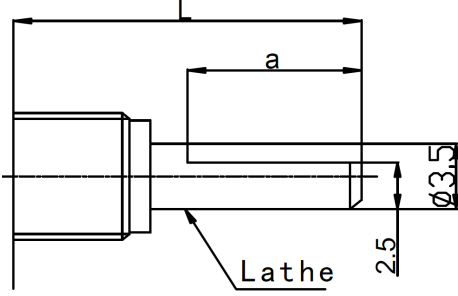
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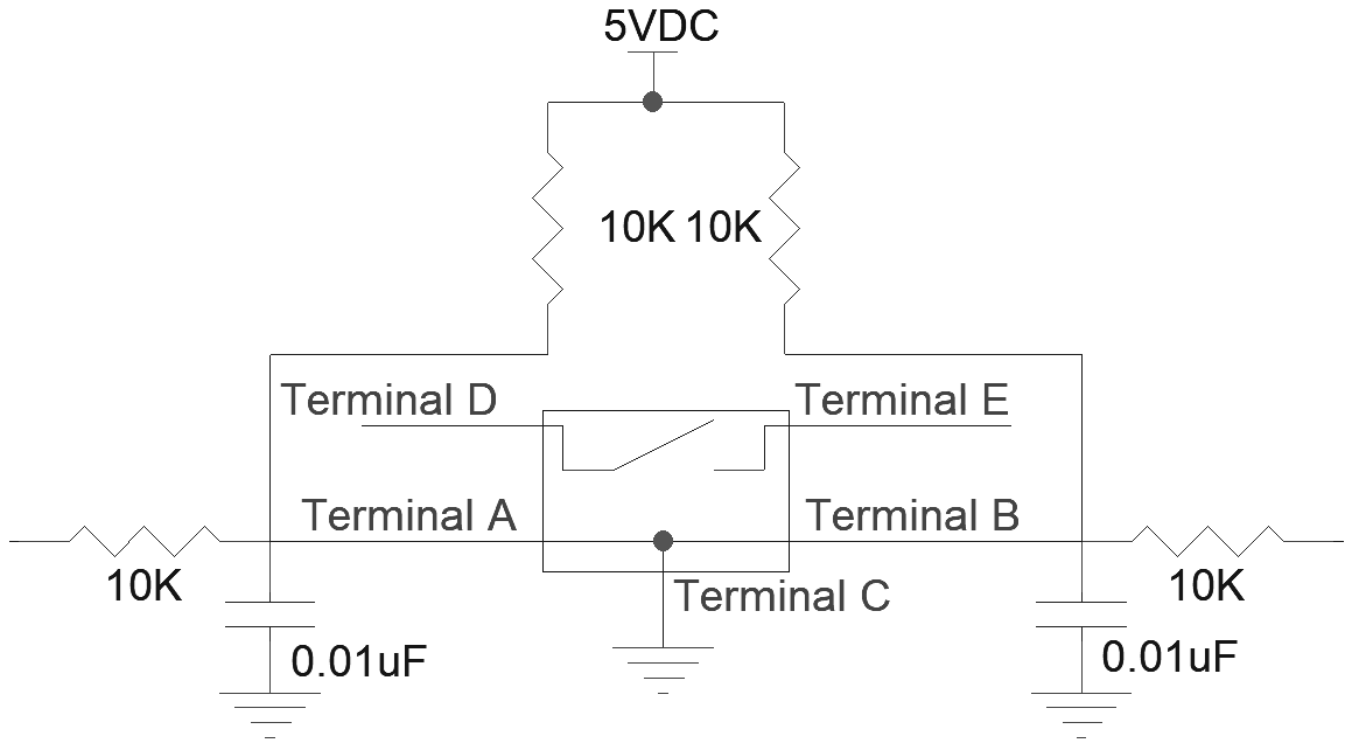
Shaft Style Table

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

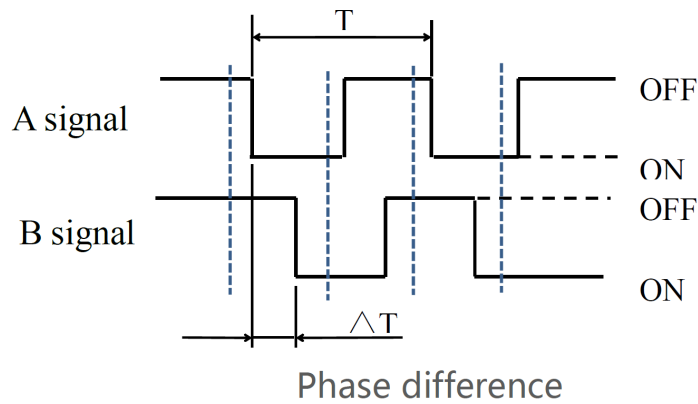
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Recommended Filter Schematic



Output Phase shift



Packaging

Standard Packaging	N/A
Included Hardware	None

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