

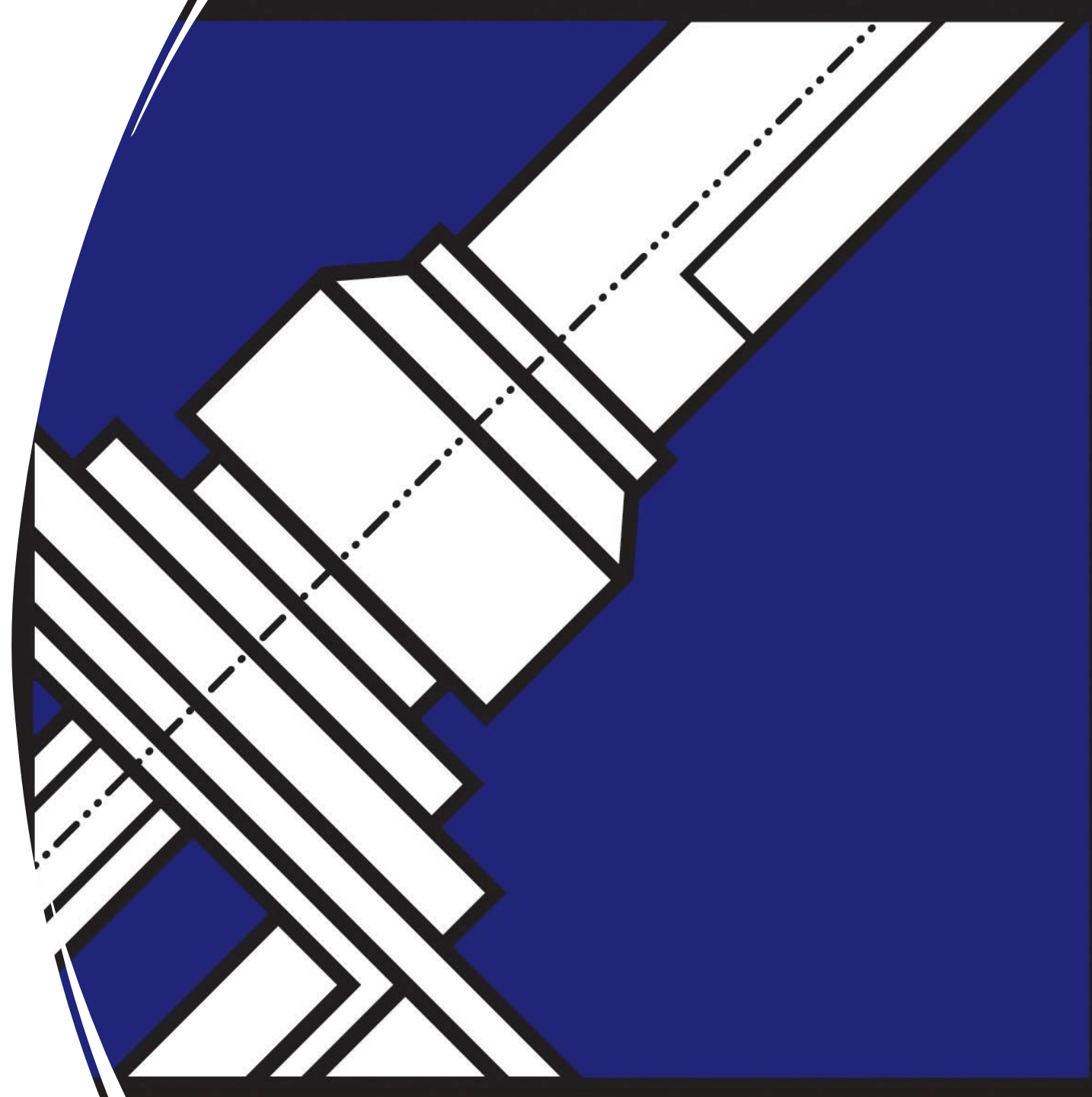
11 mm Encoders

Types of 11mm CP pots:

- Model DC11B Encoder
- Model DC11L Encoder
- Model EN11 Series Encoder

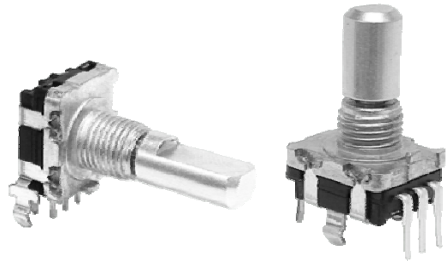
These will be further classified as :-

Top/side adjust, metal bushing/shaft, push-on switch option



ENCODER

11mm Size Encoder



◆FEATURE

- High-precision rotary type encoder.
- Compact design, long life and high reliability.
- Low cost as compared with optical type.
- Available in a wide variety of line up to meet all user needs.

◆APPLICATIONS

- All kinds of level control, tuning and timer setting in audio-visual equipment, ordinary household electric appliances, radio equipment, communications equipment, etc.

◆ COMMON SPECIFICATIONS

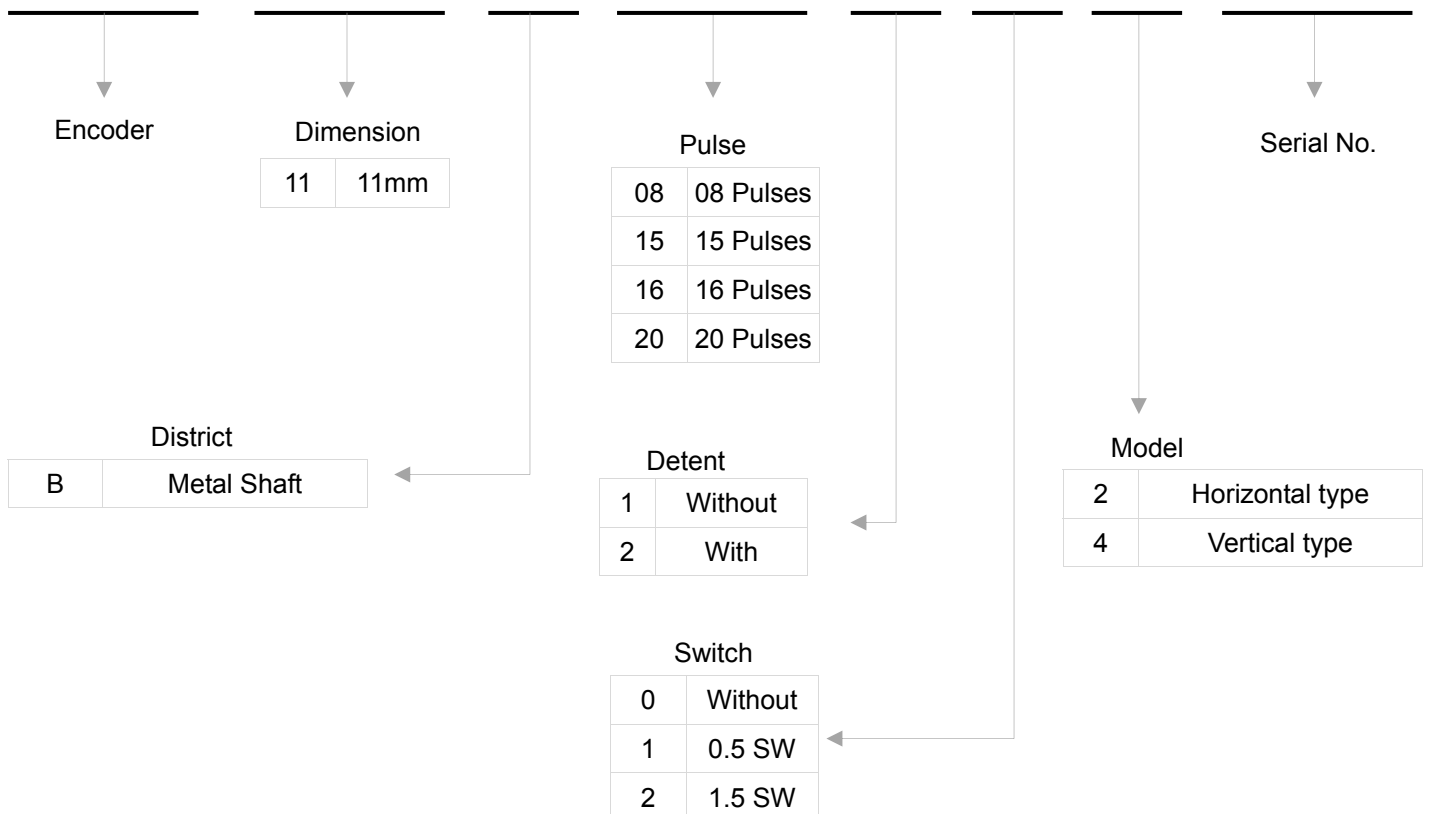
Pulse	Number of detent	Phase difference (msec)	Chattering (msec)	Sliding noise (msec)	Insulation resistance	Dielectric strength	Detent torque (gf · cm)	Rotational life (cycle)
8	0	4	3	3	250V DC 100MΩ MIN	300V AC 1 min	30~200	15,000
	16							
15	0	6	2	2				
	30							
16	0	4	3	3				
	16							
20	0	4	2	2				
	20							

◆ SWITCH SPECIFICATIONS

Rating	Contact resistance	Insulation resistance	Dielectric strength	Contact arrangement	Travel of switch (mm)	Operating force (gf)	Operating life(cycle)
DC 5V10 mA	100 mΩ	250V DC 100MΩ MIN	300V AC 1 min	PUSH ON	0.5	600±300	20,000
					1.5	400±200	

◆ PRODUCT NUMBERING SYSTEM

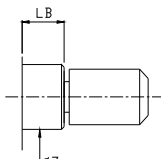
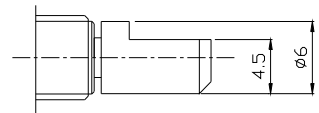
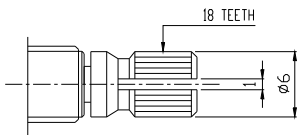
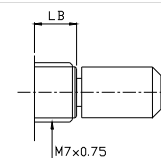
D	C	1	1	B	2	0	2	1	4	0	1
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ENCODER

11mm Size Encoder

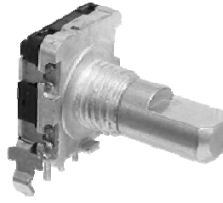
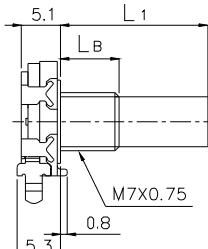
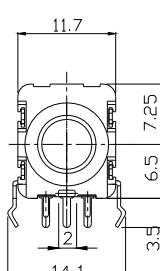
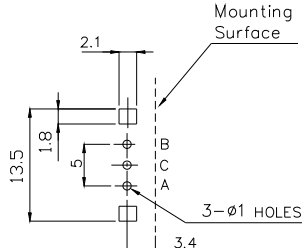
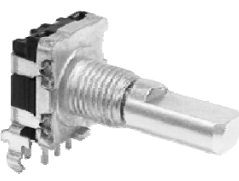
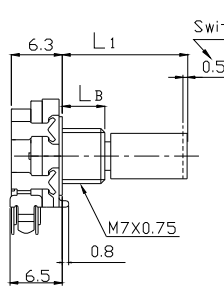
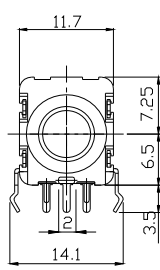
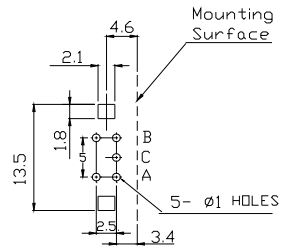
◆ BUSHING & SHAFT TYPE

Bushing	Flat	Knurled
		
		

◆ STANDARD DIMENSION OF SHAFT AND BUSHING

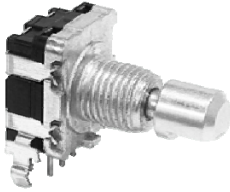
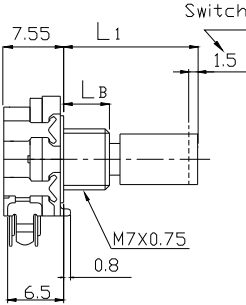
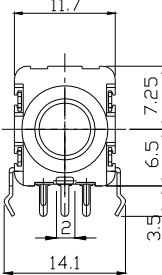
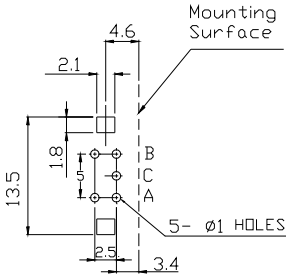
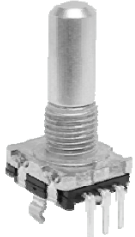
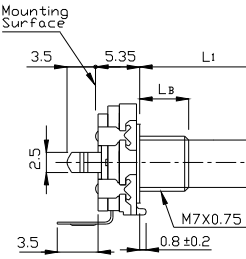
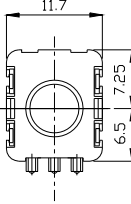
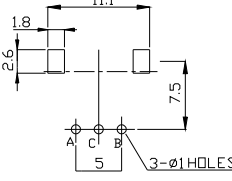
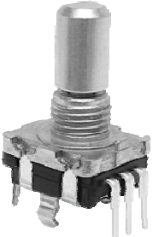
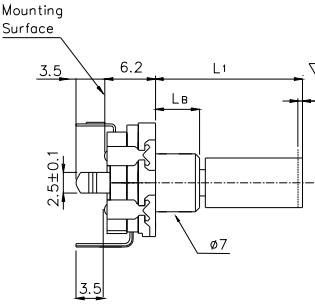
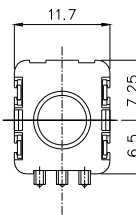
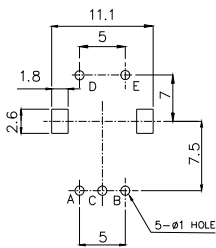
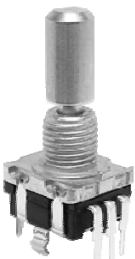
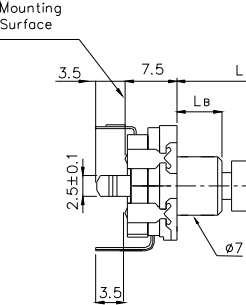
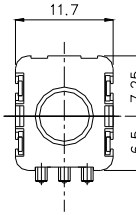
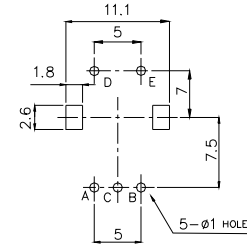
Dimension	LB	L1
	5	15 · 20
	7	20 · 25
	5	15 · 20
	7	20 · 25

DIMENSIONS Unit : mm

Model	Dimensions		
DC11B2020 horizontal type 			 <p>MOUNTING HOLE DETAIL VIEWED FROM MOUNTING SIDE</p>
DC11B20212 with push on switch -0.5mm horizontal type 			 <p>MOUNTING HOLE DETAIL VIEWED FROM MOUNTING SIDE</p>

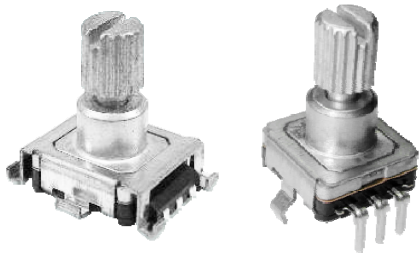
ENCODER

11mm Size Encoder

Model	Dimensions		
<p>DC11B20222 with push on switch –1.5mm horizontal type</p> 	 <p>7.55 L1 L_B Switch travel 1.5 M7X0.75 0.8 6.5</p>	 <p>11.7 7.25 6.5 3.5 14.1</p>	 <p>Mounting Surface 4.6 2.1 13.5 1.8 5 B C A 5- Ø1 HOLES 2.5 3.4</p> <p>MOUNTING HOLE DETAIL VIEWED FROM MOUNTING SIDE</p>
<p>DC11B20204 vertical type</p> 	 <p>Mounting Surface 3.5 5.35 L1 L_B 2.5 M7X0.75 0.8±0.2 3.5</p>	 <p>11.7 7.25 6.5</p>	 <p>11.1 1.8 2.6 7.5 5 A C B 3-Ø1 HOLES</p> <p>MOUNTING HOLE DETAIL VIEWED FROM MOUNTING SIDE</p>
<p>DC11B20214 with push on switch –0.5mm vertical type</p> 	 <p>Mounting Surface 3.5 6.2 L1 L_B Switch travel 0.5 2.5±0.1 ø7 3.5</p>	 <p>11.7 7.25 6.5</p> <p>D—E CIRCUIT DIAGRAM</p>	 <p>11.1 5 1.8 2.6 7 7.5 5 A C B 5-Ø1 HOLE</p> <p>MOUNTING HOLE DETAIL VIEWED FROM MOUNTING SIDE</p>
<p>DC11B20224 with push on switch –1.5mm vertical type</p> 	 <p>Mounting Surface 3.5 7.5 L1 L_B Switch travel 1.5 2.5±0.1 ø7 3.5</p>	 <p>11.7 7.25 6.5</p> <p>D—E CIRCUIT DIAGRAM</p>	 <p>11.1 5 1.8 2.6 7 7.5 5 A C B 5-Ø1 HOLE</p> <p>MOUNTING HOLE DETAIL VIEWED FROM MOUNTING SIDE</p>

ENCODER

11mm Size Slim Type Encoder



◆FEATURE

- Encoder of Surface Mount Device type.
- With push-on switch.

◆APPLICATIONS

- Most suitable for all controls of compact and low profile electronic equipment.
- Hi-Fi, CD, Mini Disc and MP3 players, volume, tone and title search controls.
- TV/monitor OSD setting.

◆ COMMON SPECIFICATIONS

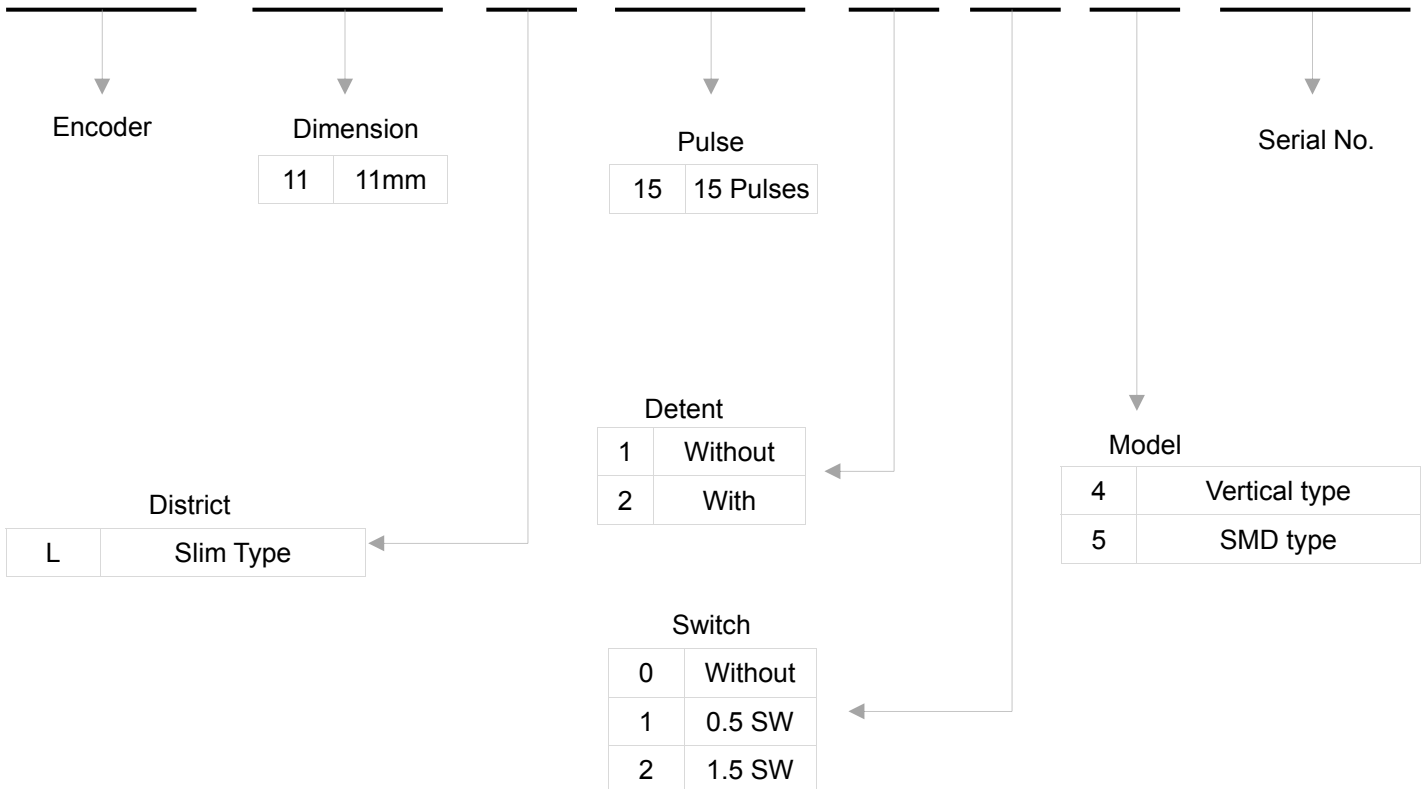
Pulse	Number of detent	Phase difference (msec)	Chattering (msec)	Sliding noise (msec)	Insulation resistance	Dielectric strength	Detent torque (gf · cm)	Rotational life (cycle)
15	0	4	2	2	250V DC 100MΩ MIN	300V AC 1 min	100±70	15,000
	30							

◆ SWITCH SPECIFICATIONS

Rating	Contact resistance	Insulation resistance	Dielectric strength	Contact arrangement	Travel of switch (mm)	Operating force (gf)	Operating life(cycle)
DC 5V 10 mA	100 mΩ	250V DC 100MΩ MIN	300V AC 1 min	PUSH ON	0.5	350±100	20,000
					1.5	400±200	

◆ PRODUCT NUMBERING SYSTEM

D	C	1	1	L	1	5	2	1	4	0	1
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ENCODER

11mm Size Slim Type Encoder

◆ STANDARD DIMENSION OF SHAFT AND BUSHING

Knurled Type (Zinc Diecast)

Without Switch			0.5mm Switch Stroke			1.5mm Switch Stroke		
L1	LB	L2	L1	LB	L2	L1	LB	L2
9.5	5	4.5	9.5	5	2.9	9.5	5	2.9
			13.5	5	6.9	13.5	5	6.9

Knurled Type (Aluminum)

Without Switch			0.5mm Switch Stroke			1.5mm Switch Stroke		
L1	LB	L2	L1	LB	L2	L1	LB	L2
15	5	8	15	5	7	15	5	6
20	7	10	20	7	9	20	7	8

FLAT TYPE

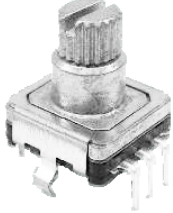
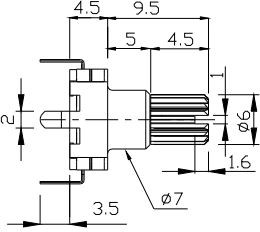
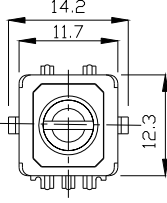
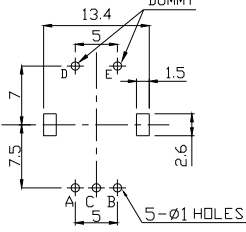
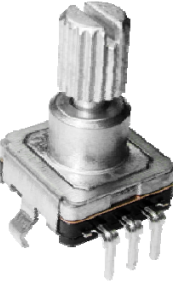
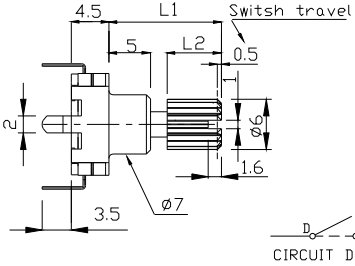
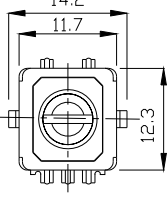
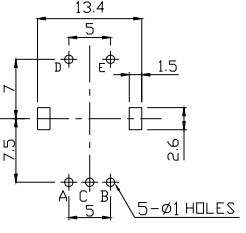
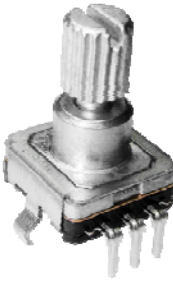
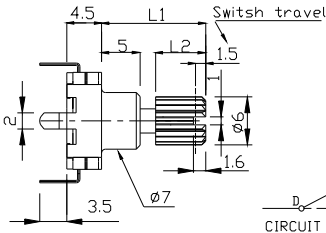
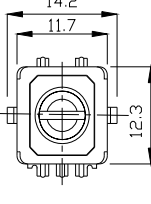
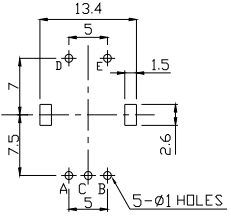
Without Switch			0.5mm Switch Stroke			1.5mm Switch Stroke		
L1	LB	L2	L1	LB	L2	L1	LB	L2
15	5	7	15	5	7	15	5	7
20	7	12	20	7	10	20	7	10

ENCODER

11mm Size Slim Type Encoder

DIMENSION

Unit : mm

Model	Dimensions		
<p>DC11L15204 vertical type</p> 			
<p>DC11L15214 with push on switch-0.5SW vertical type</p> 	 <p>CIRCUIT DIAGRAM</p>		
<p>DC11L15224 with push on switch -1.5SW vertical type</p> 	 <p>CIRCUIT DIAGRAM</p>		

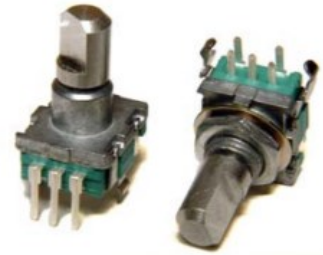
Rotary Encoder

Model EN11 Series



Features:

- 11 mm
- 2 bits gray code
- Incremental/contacting type
- Metal bushing/shaft
- Push-on switch option



Model Styles Available

Top Adjust, with Switch, Threaded Bushing	EN11-HSM
Top Adjust, without Switch, Threaded Bushing	EN11-HNM
Top Adjust, with Switch, Plain Bushing	EN11-HSB
Top Adjust, without Switch, Plain Bushing	EN11-HNB
Side Adjust, with Switch, Threaded Bushing	EN11-VSM
Side Adjust, without Switch, Threaded Bushing	EN11-VNM
Side Adjust, with Switch, Plain Bushing	EN11-VSB
Side Adjust, without Switch, Plain Bushing	EN11-VNB

Electrical

Pulses (Per Revolution)	15, 20
Encoder Closed Circuit Resistance	3 Ohms, max.
Encoder Contact Rating	10mA/ 5Vdc
Operating Current, Maximum	10mA
Dielectric Strength	300Vac/1mA, 1 minute
Insulation Resistance, Minimum	100M ohms at 250Vdc/ 1mA
Sliding Noise (at 60 RPM)	2.0ms max.
Contact Bounce (at 15 RPM)	5.0ms max.
Operating Speed (RPM)	100 RPM max.
Switch Power rating	10mA/ 5Vdc
Switch Contact Resistance	100 milliohms
Actual Electrical Travel, Nominal	Continuous

Mechanical

Total Mechanical Travel	Continuous
Detents (per Revolution)	0, 20 and 30
Rotational Torque of Detent, Maximum	2.5 oz-in
Switch Operating Force	550 gf
Switch Travel	0.5mm

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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www.ttelectronics.com | sensors@ttelectronics.com

Rotary Encoder

Model EN11 Series

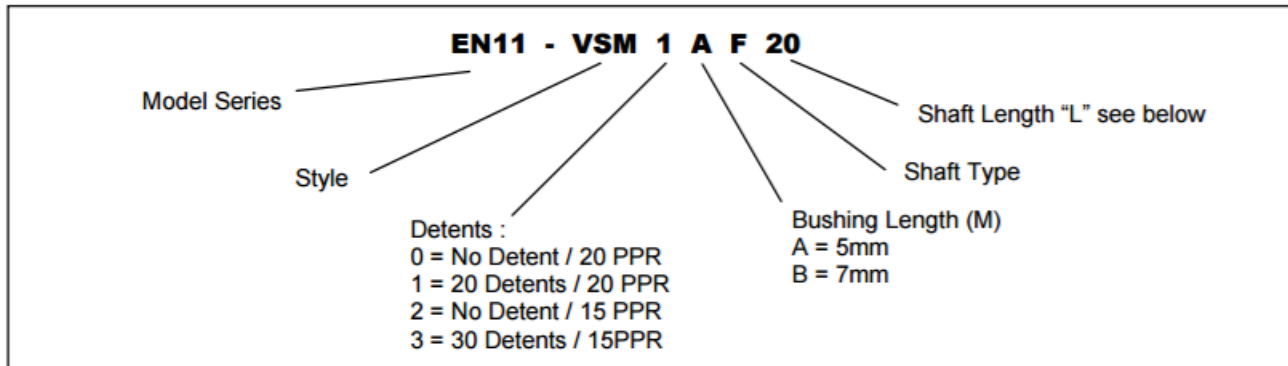


Environmental

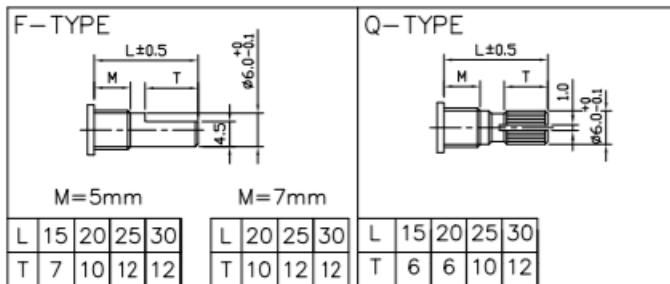
Rotational Life

30,000 cycles

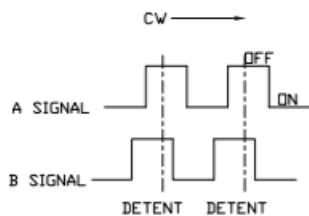
Ordering



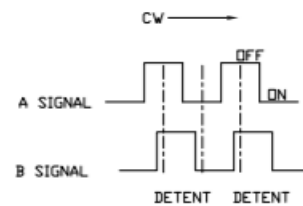
Shaft Types



Circuit Diagram



For 20 PPR (B leads A)



For 15 PPR (A leads B)

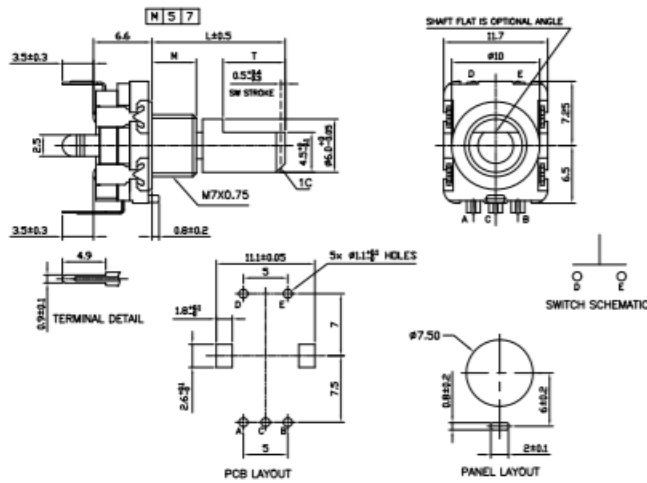
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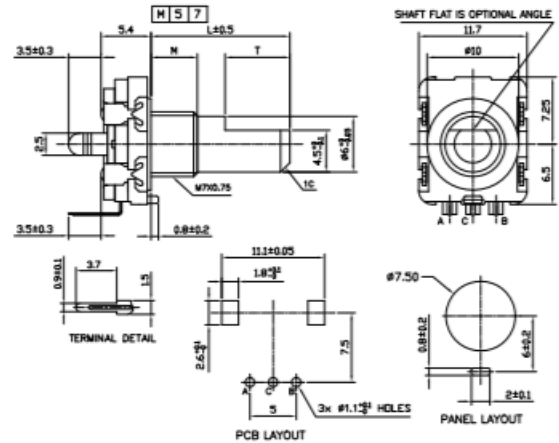
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 4200 Bonita Place, Fullerton, CA USA 92835 | Ph: +1 714 447 2345
 www.ttelectronics.com | sensors@ttelectronics.com

Outline Drawings

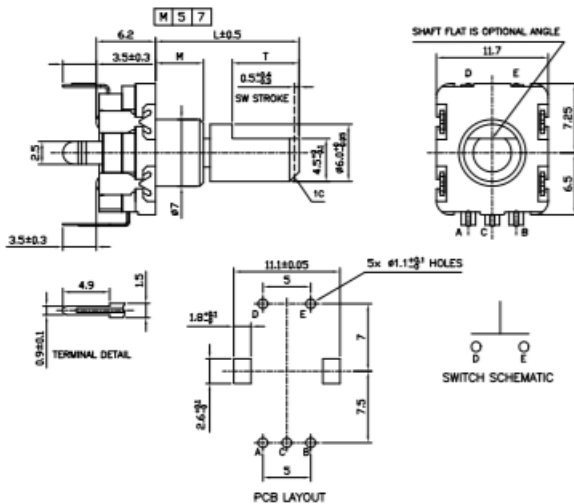
MODEL EN11-HSM
(Top Adjust, with Switch, Threaded Bushing)



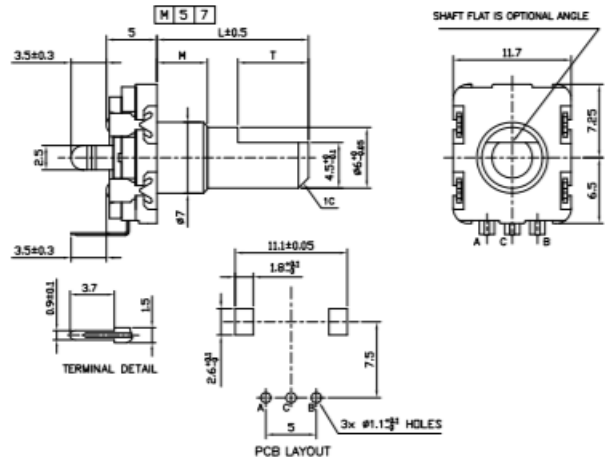
MODEL EN11-HNM
(Top Adjust, without Switch, Threaded Bushing)



MODEL EN11-HSB
(Top Adjust, with Switch, Plain Bushing)



MODEL EN11-HNB
(Top Adjust, without Switch, Plain Bushing)

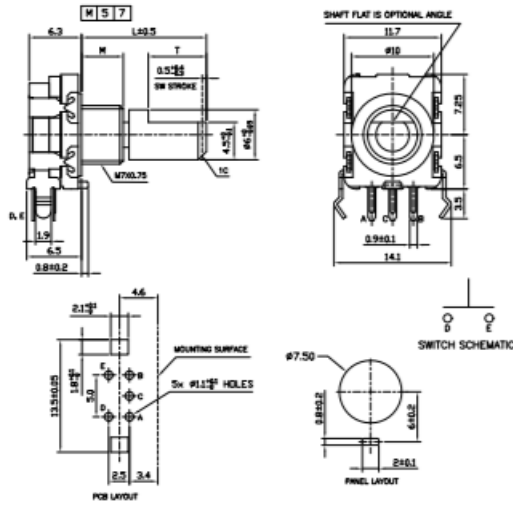


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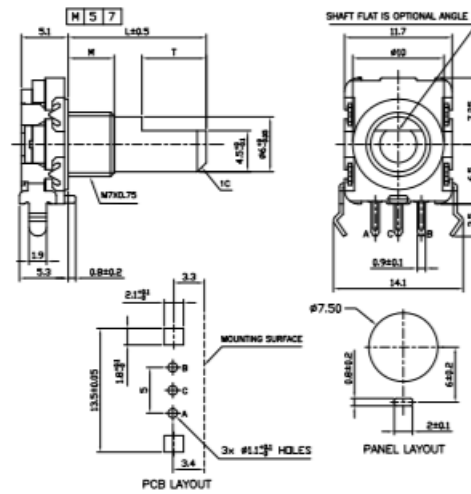
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Outline Drawings

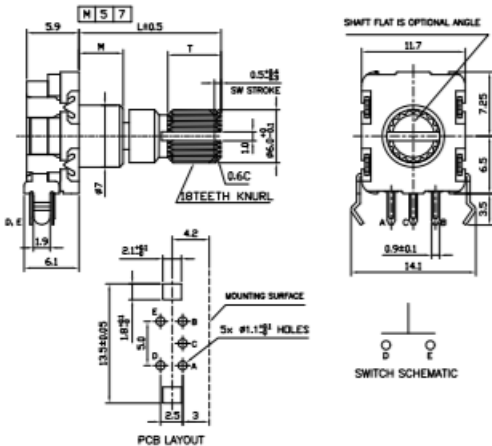
MODEL EN11-VSM
(Side Adjust, with Switch, Threaded Bushing)



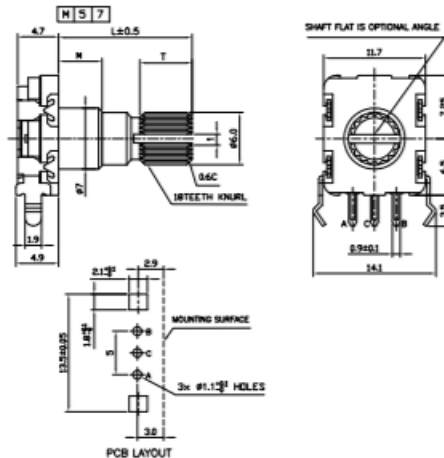
MODEL EN11-VNM
(Side Adjust, without Switch, Threaded Bushing)



MODEL EN11-VSB
(Side Adjust, with Switch, Plain Bushing)



MODEL EN11-VNB
(Side Adjust, without Switch, Plain Bushing)



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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