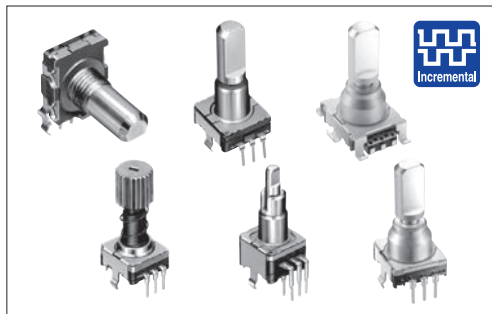


# EC11

## 11 mm Size Metal Shaft Type

Compact and highly reliable type available in many varieties



### Typical Specifications

Items	Specifications
Output signal	Two phase of A, B Self-return switch (EC11I / EC11E0B)
Rating	10mA 5V DC
Operating life	15,000 cycles 100,000 cycles (EC11K / EC11J)
Operating temperature range	-40°C to +85°C

### Product Line

Structure	Shaft configuration	Length of the shaft L (mm)	Torque (mN·m)	Number of detent	Number of pulse	Push-on switch	Travel of push-on switch (mm)	Operating life (cycles)	Minimum order unit (pcs.)		Product No.	Drawing No.			
									Japan	Export					
Horizontal	Flat	20	12±7	30	15	Without	—	15,000	700	1,400	EC11B15202AA	1			
						With	0.5				EC11B15242AE	2			
							1.5				EC11B15242AF	3			
Vertical	Flat	20	10±7	18	9	Without	—	15,000	1,200	2,400	EC11E09204A4	4			
				30	15						EC11E15204A3				
				36	18						EC11E1820402				
			10±7	18	9	Without	15				With	0.5	EC11E09244BS	5	
													30		EC11E15244G1
															EC11E153440D
				7 ± 3/4	Without								18		EC11E18244AU
															EC11E183440C
															EC11E09244AQ
			10±7	18	9	With	15				1.5	EC11E15244B2			
												EC11E1534408			
												EC11E18244A5			
7 ± 3/4	Without	18	EC11E1834403												
			EC11G1560414	6											
			EC11G1574402	7											
Less shaft wobble	Serrated	25	12±7	30	15	Without	—	100,000	1,000	2,000	EC11G1564411	8			
			8.5±5	Without		1.5	EC11K0920401				9				
			12±7	30		EC11K1520401									
Vertical	Flat	20	12±5	18	9	Without	—	100,000	1,000	2,000	EC11K0924401	10			
											30		15	With	0.5
				18	9	1.5	EC11K0925401								
							30				15		EC11K1525401		

#### Note

Other varieties are also available. Please inquire.

Refer to P.275 for product specifications.  
 Refer to P.276 for attached parts.  
 Refer to P.278 for product varieties.  
 Refer to P.307 for soldering conditions.

Encoders  
Metal Shaft  
Insulated Shaft  
Hollow Shaft  
Ring Type

# EC11 11 mm Size Metal Shaft Type

## Product Line

Structure	Shaft configuration	Length of the shaft L <sub>1</sub> , L <sub>2</sub> (mm)	Torque (mN·m)	Number of detent	Number of pulse	Push-on switch	Travel of push-on switch (mm)	Operating life (cycles)	Minimum order unit (pcs.)		Product No.	Drawing No.	
									Japan	Export			
Reflow	Flat	20	12±5	18	9	Without	—	100,000	300	600	EC11J0920404	11	
											EC11J152040F		
						With	0.5				EC11J0924411	12	
											EC11J1524413		
											EC11J0925403		
											EC11J1525402		
Push lock	20-tooth Serrated	25	10±7	30	15	Without	—	15,000	800	1,600	EC11E152T409	13	
		26.4				With	8				EC11E152U402	14	
Self-return switch	Flat	15	3 to 30	Without	Self-return switch	Without	—	15,000	1,200	2,400	EC1110120005	15	
		20					0.5				EC111012010H	16	
						1.5	EC1110120201						
Dual-shaft	Slotted	Inner-shaft=25 Outer-shaft=15	10±7	30	15	Without	—	15,000	700	1,400	EC11EBB24C03	17	
		Flat					Inner-shaft=25 Outer-shaft=15				With	1.5	EC11E0B2LB01
						Slotted					Outer-shaft=15	3 to 30	Without

### Note

Other varieties are also available. Please inquire.

## Packing Specifications

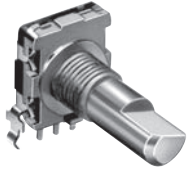
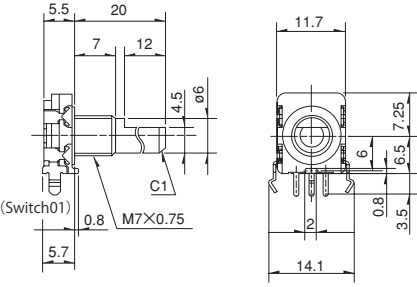
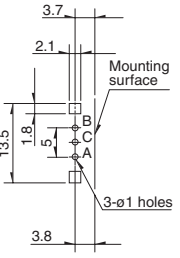
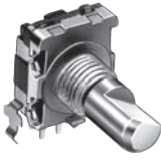
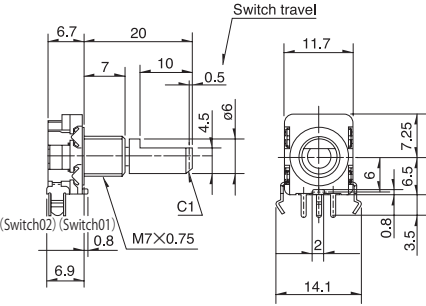
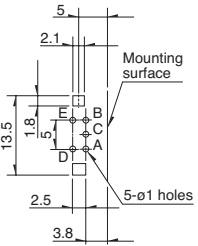
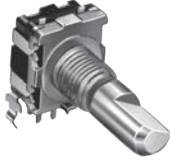
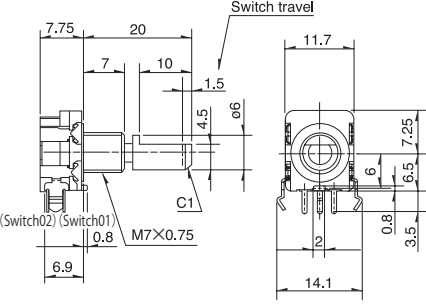
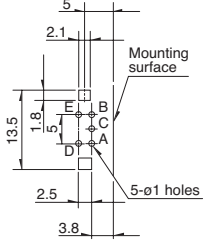

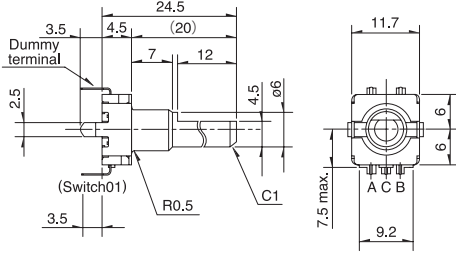
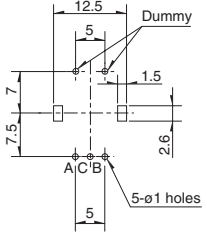

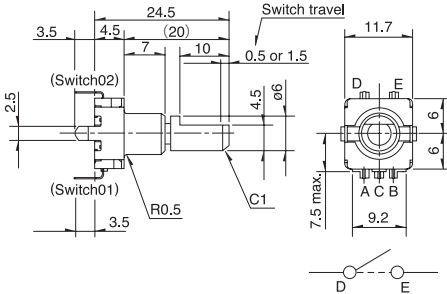
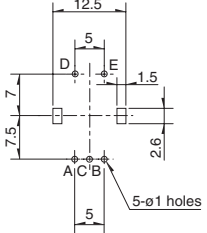
### Tray

Product No.	Number of packages (pcs.)		Export package measurements (mm)
	1 case /Japan	1 case /export packing	
EC11B	700	1,400	370×520×201
EC11E09 / 15 / 18	1,200	2,400	540×360×250
EC11G / EC11K	1,000	2,000	
EC11J	300	600	369×283×263
EC11E152T / U	800	1,600	363×507×230
EC111	1,200	2,400	363×507×216
EC11E0B / BB	700	1,400	

Refer to P.275 for product specifications.  
 Refer to P.276 for attached parts.  
 Refer to P.278 for product varieties.  
 Refer to P.307 for soldering conditions.

Dimensions

Unit:mm


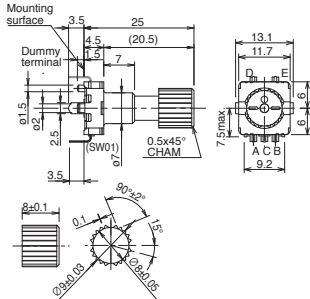
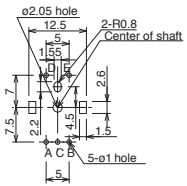

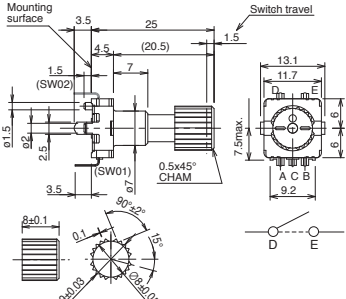
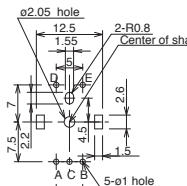

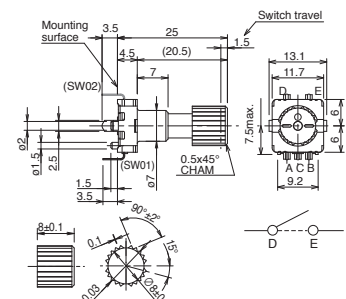
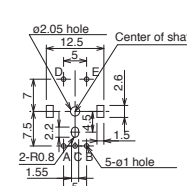

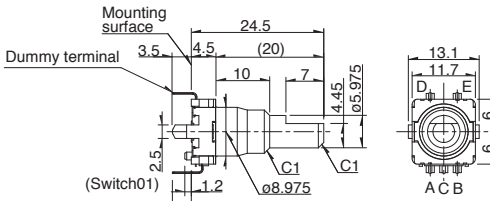
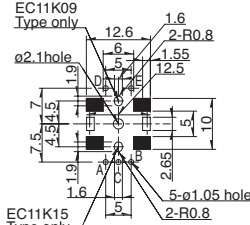

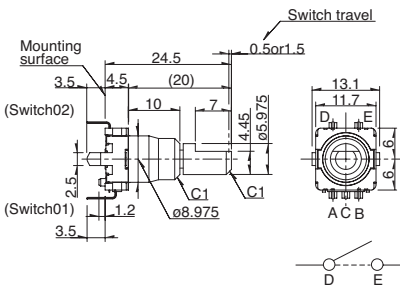
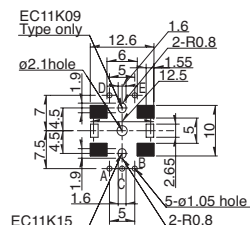
No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
1			
2			
3			
4			
5			

- Encoders
- Metal Shaft
- Insulated Shaft
- Hollow Shaft
- Ring Type

# EC11 11 mm Size Metal Shaft Type


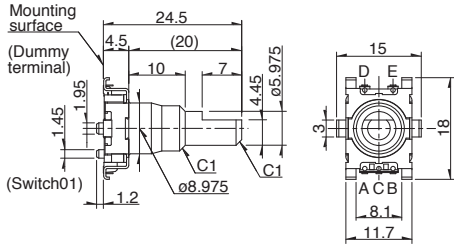
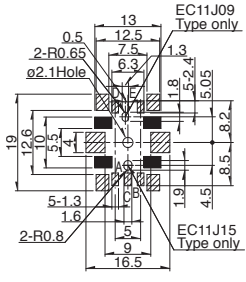

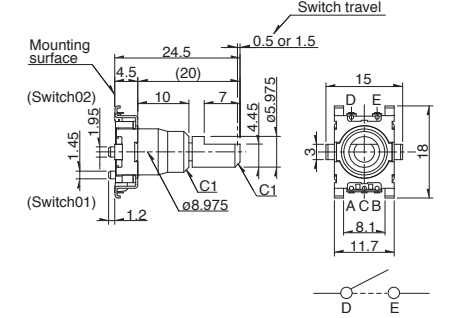
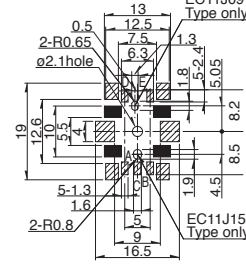

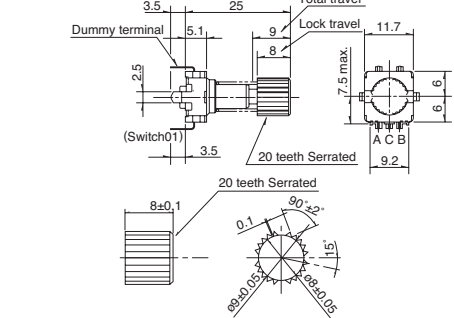
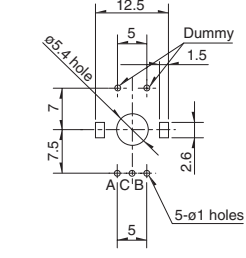

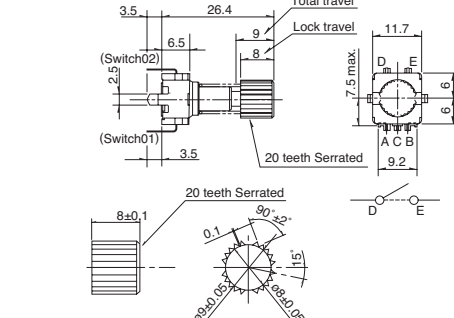
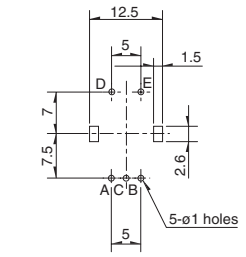

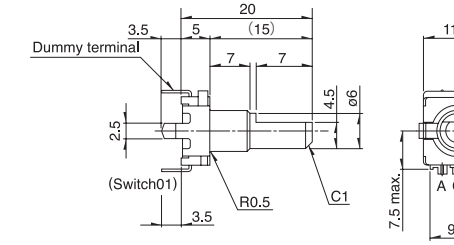
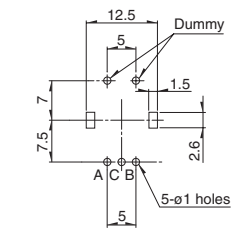
## Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
6			
7			
8			
9			 <p>EC11K09 Type only</p> <p>EC11K15 Type only</p> <p>Black part : Do not solder and no wiring for electrical contact.</p>
10			 <p>EC11K09 Type only</p> <p>EC11K15 Type only</p> <p>Black part : Do not solder and no wiring for electrical contact.</p>

Dimensions

Unit:mm


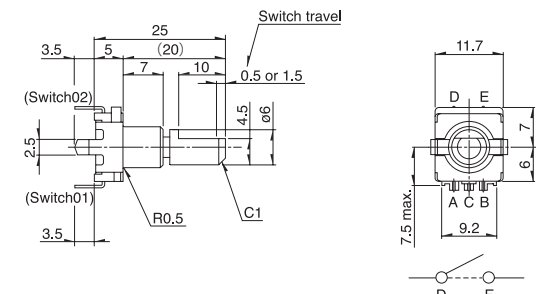
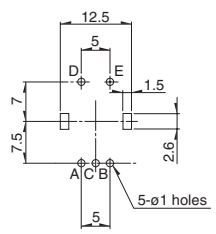
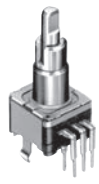
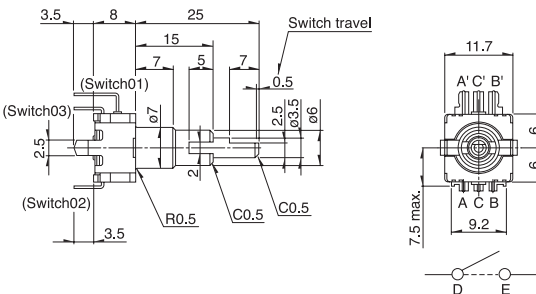
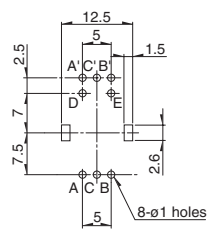
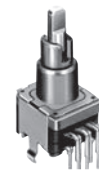
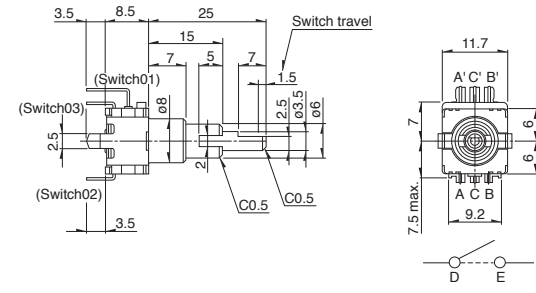
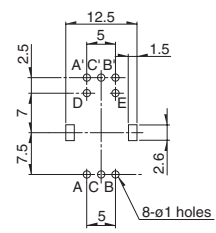
No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
11		 <p>Mounting surface (Dummy terminal) (Switch01) 24.5 (20) 4.5 10 7 4.45 0.5, 9.75 1.45 1.95 1.2 ø8.975 C1 15 3 18 D E A C B 8.1 11.7</p>	 <p>EC11J09 Type only EC11J15 Type only 13 12.5 7.5 6.3 1.3 1.8 5.2 5.05 19 12.6 10 3.3 2-R0.65 ø2.1Hole 5-1.3 1.6 2-R0.8 5 9 16.5 1.9 4.5 8.5 8.2</p> <p>A slant line part: The solder land Black part: Do not solder and wiring for electrical contact</p>
12		 <p>Mounting surface (Switch02) (Switch01) 24.5 (20) 4.5 10 7 4.45 0.5, 9.75 1.45 1.95 1.2 ø8.975 C1 Switch travel 0.5 or 1.5 15 3 18 D E A C B 8.1 11.7</p>	 <p>EC11J09 Type only EC11J15 Type only 13 12.5 7.5 6.3 1.3 1.8 5.2 5.05 19 12.6 10 3.3 2-R0.65 ø2.1Hole 5-1.3 1.6 2-R0.8 5 9 16.5 1.9 4.5 8.5 8.2</p> <p>A slant line part: The solder land Black part: Do not solder and wiring for electrical contact</p>
13		 <p>Dummy terminal (Switch01) 3.5 5.1 2.5 3.5 25 9 11.7 7.5 max. 6 6 9.2 20 teeth Serrated 8±0.1 0.1 90°±2° 15° ø9±0.05 ø8±0.05</p>	 <p>12.5 5 1.5 Dummy ø5.4 hole 7 7.5 2.6 5 5-ø1 holes A C B</p>
14		 <p>(Switch02) (Switch01) 3.5 6.5 2.25 3.5 26.4 9 11.7 7.5 max. 6 6 9.2 20 teeth Serrated 8±0.1 0.1 90°±2° 15° ø9±0.05 ø8±0.05 Total travel Lock travel</p>	 <p>12.5 5 1.5 7 7.5 2.6 5 5-ø1 holes A C B</p>
15		 <p>Dummy terminal (Switch01) 3.5 5 7 7 20 (15) 4.5 ø6 R0.5 C1 11.7 7.5 max. 6 7 9.2 A C B</p>	 <p>12.5 5 1.5 7 7.5 2.6 5 5-ø1 holes Dummy A C B</p>

- Encoders
- Metal Shaft
- Insulated Shaft
- Hollow Shaft
- Ring Type

# EC11 11 mm Size Metal Shaft Type

## Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
16	 <p><b>EC111</b> Self-return switch with push-on switch (travel 0.5mm / 1.5mm)</p>		
17	 <p><b>EC11E</b> Dual-shaft type with push-on switch (travel 0.5mm) Inner shaft: encoder Outer shaft: encoder</p>		
18	 <p><b>EC11E</b> Dual-shaft type with push-on switch (travel 1.5mm) Inner shaft: encoder Outer shaft: self-return switch</p>		

Encoders

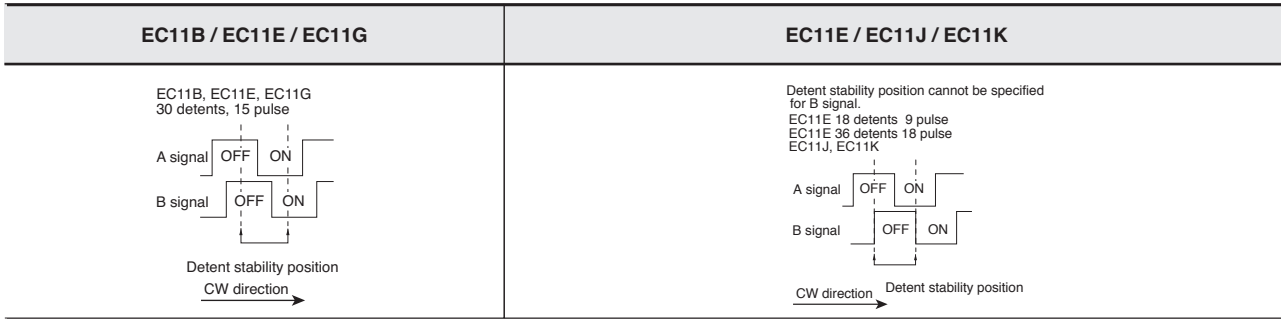
Metal Shaft

Insulated Shaft

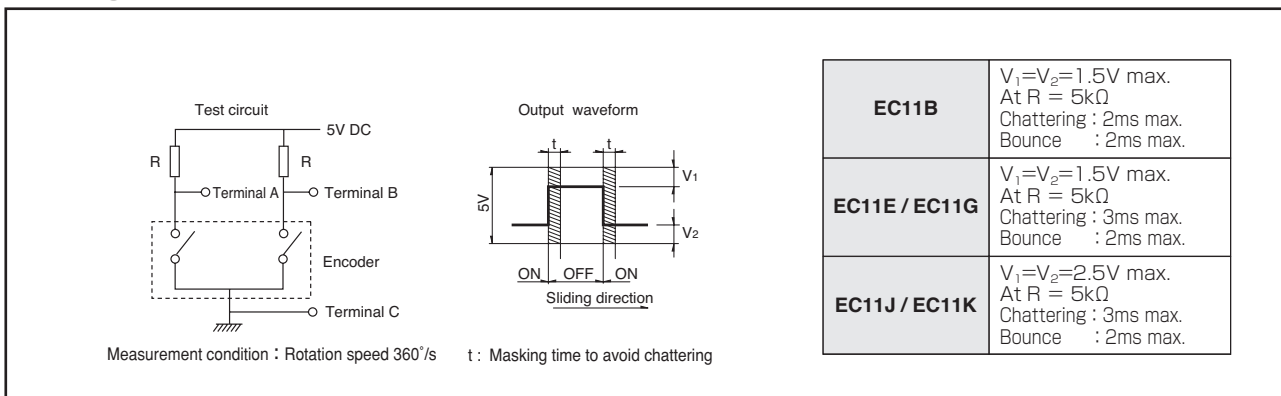
Hollow Shaft

Ring Type

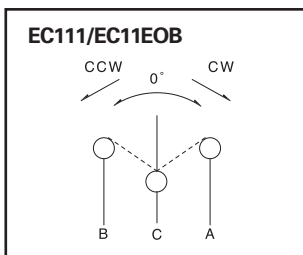
Output Wave



Sliding Noise



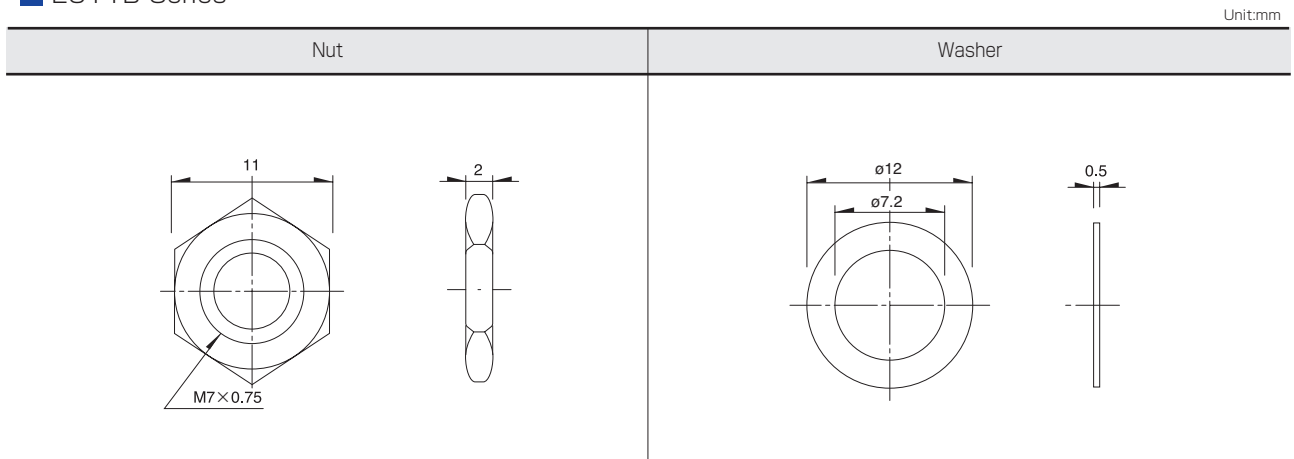
Circuit Diagram



11 mm Size Metal Shaft Type / Attached Parts

The following parts are included with the product.

EC11B Series



Encoders  
Metal Shaft  
Insulated Shaft  
Hollow Shaft  
Ring Type

# 1 1 mm Size Metal Shaft Type / Product Varieties

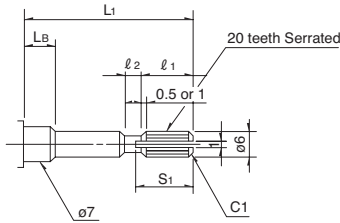
## Shaft Dimensions

### 1. Single-shaft Type

#### 1) Serrated Type

Unit:mm

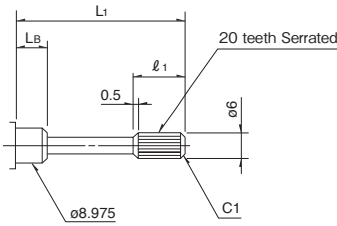
**EC11**  
Configuration (Shaft diameter:  $\phi 6$ )  
Not applicable for EC11E  
and EC11G with push-lock  
mechanism



#### Detailed dimensions

$L_1$	$L_B$	$l_1$	$l_2$	$S_1$
20	7	6	1	7
25	10	10	2	11

**EC11K / EC11J**  
Configuration (Shaft diameter:  $\phi 6$ )



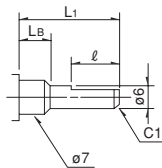
#### Detailed dimensions

$L_1$	$L_B$	$l_1$
15	7	5
20	10	6

#### 2) Flat Type

Unit:mm

**EC11**  
Configuration (Shaft diameter:  $\phi 6$ )

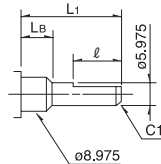


#### Detailed dimensions

$L_1$	$L_B$	$l$
*1 15	5	7
15	7	5 (6)
20	7	10 (12)
*2 25	10	12

\*1 Does not comply with EC111  
\*2  $L_B=7$  for EC11B.  
Values in parentheses apply to products  
without push-on switch.

**EC11K / EC11J**  
Configuration (Shaft diameter:  $\phi 5.975$ )



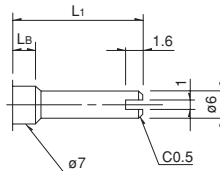
#### Detailed dimensions

$L_1$	$L_B$	$l$
15	7	5
20	10	7

#### 3) Slotted Type

Unit:mm

**EC11**  
Configuration (Shaft diameter:  $\phi 6$ )

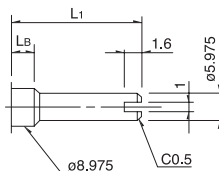


#### Detailed dimensions

$L_1$	$L_B$
15	7
20	7
* 25	10

\*  $L_B=7$  for EC11B.

**EC11K / EC11J**  
Configuration (Shaft diameter:  $\phi 5.975$ )



#### Detailed dimensions

$L_1$	$L_B$
15	7
20	10

### Notes

- The highlighted figures in shaft types refer to Product Specifications in P.269 and P.270.
- Other varieties are also available. Please inquire.



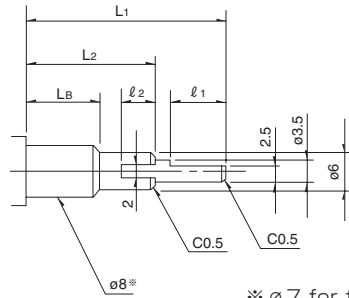
# 1 1 mm Size Metal Shaft Type / Product Varieties

## 2. Standard Dimensions and Configuration of Dual-shaft Type

### 1) Flat Type

Unit:mm

**Configuration (Inner-shaft : $\phi$ 3.5 Outer-shaft : $\phi$ 6)**



● Detailed dimensions

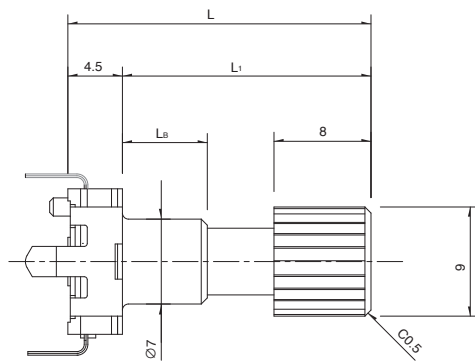
$L_1$	$L_2$	$L_B$	$l_1$	$l_2$
20	10		7	4
25	15	7	7	5
30	20	10	7	5

※  $\phi$  7 for type with inner / outer shaft encoders (EC11EBB)

### ■ Type of Shaft Length

Unit:mm

**EC11G**



● Detailed dimensions

L	$L_1$	$L_B$
18	13.5	5
25	20.5	7
28	23.5	10

### Notes

1. The highlighted figures in shaft types refer to Product Specifications in P.270.
2. Other varieties are also available. Please inquire.

Encoders

Metal Shaft

Insulated Shaft

Hollow Shaft

Ring Type

# 1 1 mm Size Metal Shaft Type/Switch Specifications

## 1. EC11B Series

Switch type		Momentary push switch	
Contact arrangement		Single pole and single throw (Push-on)	
Travel (mm)		$0.5 \pm_{-0.3}^{+0.4}$	$1.5 \pm 0.5$
Operating force		$6 \pm 3\text{N}$	$5 \pm 2\text{N}$
Operating life		25,000 times	20,000 times
Electrical performance	Rating	0.1A 5V DC (500 $\mu$ A 5V DC min. ratings)	
	Contact resistance	100m $\Omega$ max. for initial period, 200m $\Omega$ max. after operating life.	
	Insulation resistance	100M $\Omega$ min. 250V DC	
	Voltage proof	300V AC for 1 minute or 360V AC for 2s	

## 2. EC11E/EC111 Series

Switch type		Momentary push switch	
Contact arrangement		Single pole and single throw (Push-on)	
Travel (mm)		$0.5 \pm 0.3$	$1.5 \pm 0.5$
Operating force		$6 \pm_{-2}^{+2.5}\text{N}$	$4 \pm 2\text{N}$
Operating life		20,000 times	
Electrical performance	Rating	0.1A 5V DC (500 $\mu$ A 5V DC min. ratings)	
	Contact resistance	100m $\Omega$ max. for initial period, 200m $\Omega$ max. after operating life.	
	Insulation resistance	100M $\Omega$ min. 250V DC	
	Voltage proof	300V AC for 1 minute or 360V AC for 2s	

## 3. EC11G Series

Switch type		Momentary push switch	
Contact arrangement		Single pole and single throw (Push-on)	
Travel (mm)		$1.5 \pm 0.35$	
Operating force		$5 \pm 2\text{N}$	
Operating life		20,000 times	
Electrical performance	Rating	0.15A 5V DC (500 $\mu$ A 5V DC min. ratings)	
	Contact resistance	100m $\Omega$ max. for initial period, 200m $\Omega$ max. after operating life.	
	Insulation resistance	100M $\Omega$ min. 250V DC	
	Voltage proof	300V AC for 1 minute or 360V AC for 2s	

Encoders

Metal Shaft

Insulated Shaft

Hollow Shaft

Ring Type

# 11 mm Size Metal Shaft Type/Switch Specifications

## 4. EC11K/EC11J Series

Switch type	Momentary push switch	
Contact arrangement	Single pole and single throw (Push-on)	
Travel (mm)	0.5±0.3	1.5±0.5
Operating force	5±2N	4±2N
Operating life	1,000,000 times	100,000 times
Electrical performance	Rating	0.1A 5V DC (0.1mA 5V DC min. ratings)
	Contact resistance	100mΩ max. for initial period, 200mΩ max. after operating life.
	Insulation resistance	100MΩ min. 250V DC
	Voltage proof	300V AC for 1 minute or 360V AC for 1s

## 5. EC11E152U Series

Switch type	Push lock mechanism switch	
Contact arrangement	Single pole and single throw (Push-on)	
Travel (mm)	8±0.8	
Operating force	8N max.	
Operating life	10,000 times	
Electrical performance	Rating	0.1A 5V DC (500μA 5V DC min. ratings)
	Contact resistance	100mΩ max. for initial period, 200mΩ max. after operating life.
	Insulation resistance	100MΩ min. 250V DC
	Voltage proof	300V AC for 1 minute or 360V AC for 2s

Encoders

Metal Shaft

Insulated Shaft

Hollow Shaft

Ring Type

# Encoders

## List of Varieties











Encoders

Metal Shaft

Insulated Shaft

Hollow Shaft













Ring Type

Type		Metal shaft																					
		9mm size		11mm size																			
Series		EC09E		EC11B		EC11E				EC11G													
Photo																							
Output		Incremental (Two phase A and B )																					
Shaft types		Single-shaft						Dual-shaft		Single-shaft													
Operating direction		Vertical		Horizontal		Vertical																	
Number of pulse / Number of detent		15 / 30				9 / 18 15 / 30 or without 18 / 36 or without				15 / 30 or without													
Features		—		—		Without detent Push-lock mechanism				—		Less shaft wobble											
Dimensions (mm)		W		9.5		11.7																	
		D				13.8		12															
		H		4.5		5.5		4.5		8 / 8.5		4.5											
Operating temperature range		-40°C to+85°C																					
Operating life		15,000 cycles																					
Automotive use		●		●		●				●													
Life cycle (availability)																							
Electrical performance		Rating		10mA 5V DC																			
		Max./min. operating current (Resistive load)		10mA / 1mA																			
		Insulation resistance		100MΩ min. 250V DC																			
		Voltage proof		300V AC for 1 minute or 360V AC for 1s		300V AC for 1 minute or 360V AC for 2s																	
Mechanical performance		Rotational torque (Without detent)		—		—		7 <sup>+3</sup> / <sub>-4</sub> mN·m		—		8.5±5mN·m											
		Detent torque		8±5mN·m		12±7mN·m		10±7mN·m				12±7mN·m											
		Push-pull strength		100N																			
Shaft configuration		Flat		Flat, Slotted, Serrated				Inner-shaft : Flat Outer-shaft : Slotted		Serrated													
Terminal type		Insertion																					
Switch Specifications		Switch type		Push-on switch				Push-lock mechanism switch ※		Push-on switch													
		Contact arrangement		Single pole and single throw (Push-on)																			
		Travel (mm)		0.5±0.3		1.5±0.5		0.5 <sup>+0.4</sup> / <sub>-0.3</sub>		1.5±0.5		0.5±0.3		1.5±0.5		1.5±0.35							
		Operating force (N)		6 <sup>+2.5</sup> / <sub>-2</sub>		4±2		6±3		5±2		6 <sup>+2.5</sup> / <sub>-2</sub>		4±2		8 max.		6 <sup>+2.5</sup> / <sub>-2</sub>		4±2		5±2	
		Rating		10mA 5V DC (500μA 5V DC min. ratings)		0.1A 5V DC (500μA 5V DC min. ratings)																	
		Contact resistance		100mΩ max. for initial period; 200mΩ max. after operating life.																			
Operating life		10,000 times		25,000 times		20,000 times				10,000 times		20,000 times											
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### Notes

- ※marked specification is only applicable to EC11E152U402.
- Indicates applicability to all products in the series.

Type		Metal shaft														
		11mm size					20mm size									
Series		EC111		EC11K		EC11J		EM11B	EC20A/RK203		EM20B					
Photo																
Output		Self-return switch			Incremental (Two phase A and B)											
Shaft types		Single-shaft														
Operating direction		Vertical														
Number of pulse / Number of detent		—		9/18 15/30			16/16		18/18		40/40					
Features		—		—		Surface Mount type		Magnetic type		—						
Dimensions (mm)		W		11.7					10.8		20.2					
		D		13		12		14.2		11		19.2				
		H		5		4.5			7.5		10		13			
Operating temperature range		-40°C to +85°C						-30°C to +85°C	-30°C to +80°C		-10°C to +70°C					
Operating life		15,000 cycles		100,000 cycles			1,000,000 cycles		30,000 cycles		500,000 cycles					
Automotive use		●		●		●		●	●		—					
Life cycle (availability)																
Electrical performance		Rating		10mA 5V DC					10mA 5V±5% DC		1mA 5V DC		10mA 5V±5% DC			
		Max./min. operating current (Resistive load)		10mA / 1mA					15mA / —		—		15mA / —			
		Insulation resistance		100MΩ min. 250V DC						100MΩ min.100V DC		10MΩ min. 50V DC		100MΩ min. 250V DC		
		Voltage proof		300V AC for 1 minute or 360V AC for 2s		300V AC for 1 minute or 360V AC for 1s			250V AC for 1 minute or 300V AC for 2s		50V AC for 1 minute or 60V AC for 2s		300V AC for 1 minute or 360V AC for 2s			
Mechanical performance		Rotational torque (Without detent)		3 to 30mN·m		—		—		—		7mN·m max.				
		Detent torque		—		12±5mN·m		12±5mN·m (Initial) 12±4mN·m (After reflow)		10±5mN·m		40±20mN·m		8±5mN·m		
		Push-pull strength		100N												
Shaft configuration		Flat, Slotted, Serrated						Flat								
Terminal type		Insertion				Reflow			Insertion							
Switch Specifications		Switch type		Push-on switch												
		Contact arrangement		Single pole and single throw (Push-on)												
		Travel (mm)		0.5±0.3	1.5±0.5		0.5±0.3	1.5±0.5		0.5±0.3	1.5±0.5		0.5 ± <sub>0.2</sub> <sup>0.3</sup>	1.5±0.5		0.5 ± <sub>0.3</sub> <sup>0.4</sup>
		Operating force (N)		6 ± <sub>2</sub> <sup>2.5</sup>	4±2		5±2	4±2		5±2	4±2		5.5±3	4±2		6±3
		Rating		0.1A 5V DC (500μA 5V DC min. ratings)		0.1A 5V DC (0.1mA 5V DC min. ratings)			5mA 5V DC (50mA 12V DC max. ratings)		0.5A 16V DC (1mA 16V DC min. ratings)		3A 16V DC (10mA 16V DC min. ratings)			
		Contact resistance		100mΩ max. for initial period, 200mΩ max. after operating life.						500mΩ max. for initial period, 5mΩ max. after operating life.		100mΩ max. for initial period, 200mΩ max. after operating life.				
		Operating life		20,000 times		1,000,000 times	100,000 times	1,000,000 times	100,000 times	1,000,000 times		20,000 times		25,000 times		
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Encoders  
Metal Shaft  
Insulated Shaft  
Hollow Shaft  
Ring Type

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**Note**  
● Indicates applicability to all products in the series.

# Encoders Soldering Conditions

## Reference for Manual Soldering

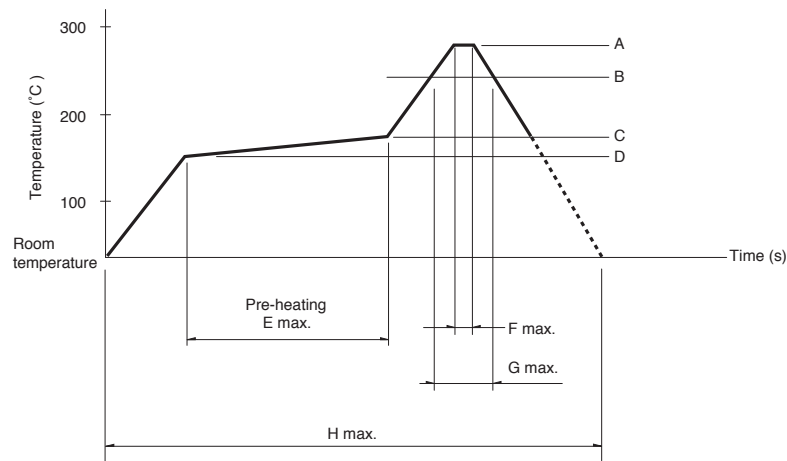
Series	Tip temperature	Soldering time	No. of solders
EC05E, EC09E, EC10E, EC111, EC11B, EC11E, EC11G, EC11K, EC12D, EC12E, EC18A, EC21A, EC28A, EC35A, EC35AH, EC35B, EC40A, EC45A, EC50A, EC60B, EM11B, EM20B, EC21C	350°C max.	3s max.	1 time
EC11J	350±10°C	3 <sup>+1</sup> <sub>0</sub> s	2 time

## Reference for Dip Soldering

Series	Preheating		Dip soldering		No. of solders
	Soldering surface temperature	Heating time	Soldering temperature	Soldering time	
EC09E, EC11B, EC111, EC11E, EC11G, EC11K, EC18A, EC21A, EC28A, EC35A, EC35AH, EC35B, EC50A, EC60B	100°C max.	2 min. max.	260±5°C	5±1s	2 time max.
EC10E, EC12D, EC12E, EM11B	100°C max.	1 min. max.	260±5°C	3±1s	2 time max.
EC40A	110°C max.	1 min. max.	260°C max.	10s max.	1 time
EC45A	100°C max.	2 min. max.	260°C max.	5s max.	2 time max.
EM20B	80°C max.	1 min. max.	260°C max.	3s max.	2 time max.

## Example of Reflow Soldering Condition

Temperature profile



Series	A	B	C	D	E	F	G	H	No. of reflows
EC11J	260°C	230°C	180°C	150°C	2 min. max.	3s	40s	4 min. max.	2 time max.
EC05E	250°C min.	230°C min.	180°C	150°C	60s to 120s	—	30s to 40s	—	2 time max.
EC21C	230°C to 245°C	220°C	200°C	150°C	60s to 120s	—	25s to 60s	300 max.	1 time max.

### 注記

- When using an infrared reflow oven, solder may sometimes not be applied. Be sure to use a hot air reflow oven or a type that uses infrared rays in combination with hot air.
- The temperatures given above are the maximum temperatures at the terminals of the encoder when employing a hot air reflow method. The temperature of the PC board and the surface temperature of the encoder may vary greatly depending on the PC board material, its size and thickness. Ensure that the surface temperature of the encoder does not rise to 250°C or greater.
- Conditions vary to some extent depending on the type of reflow bath used. Be sure to give due consideration to this prior to use.