

**Electrical Characteristics**

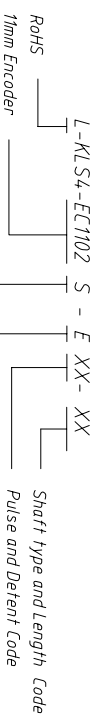
Rated Power: DC5V 5mA Max.  
 Output signal: A \ B 2signals  
 Resolution: 15 Pulses 360°  
 20 Pulses 360°  
 9 Pulses 360°  
 Phase difference: 0.08T Min.  
 Sliding noise: 3mS Max.  
 Contact Resistance: 1Ω Max.  
 Insulation resistance: 100MΩ Min. at DC 250V  
 Withstand voltage: AC300V / 1min

**Mechanical**

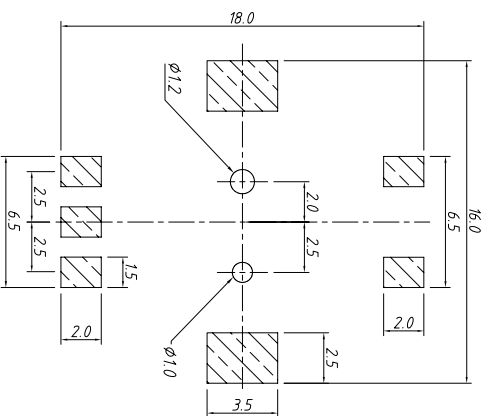
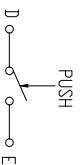
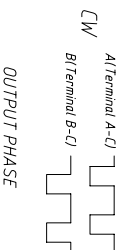
Total rotation angle: 360°  
 Rotational Torque: 20 ~ 200 gf.cm Max  
 Click Torque: 20 ~ 150 gf.cm  
 Push-pull Strength of Shaft: 8.0kgf Min.  
 Number of Detents: 30 detents Step angle: 12°±2°  
 20 detents Step angle: 18°±2°  
 18 detents Step angle: 20°±2°  
 Without detents

Rotational Life: 30000±200 cycles per 100gf.cm Min.  
 Temp. Range: -30 ° C ~ + 80 ° C  
 Soldering: 250 ° C 3Sec. Max.

**Order Information:**



- RoHS 11mm Encoder  
 Switch: S- with switch  
 Bushing:
- |                                     |   |   |    |
|-------------------------------------|---|---|----|
| <input checked="" type="checkbox"/> | E | F | H  |
| D                                   | 5 | 7 | 10 |
- Shaft type and Length Code  
 Pulse and Detent Code  
 5A: 15 Pulse with 30 Detents  
 5B: 15 Pulse without Detent  
 4A: 20 Pulse with 20 Detents  
 4B: 20 Pulse without Detent  
 3A: 9 Pulse with 18 Detents  
 3B: 9 Pulse without Detents



**PCB LAYOUT**

Shaft type	D=7		D=5		D=7		D=10	
	L	F	L	F	L	F	L	F
Q Shaft	15.5	6	11.5	4	13.7	4	16.5	7
AB Shaft	16.9	7	12.5	6	14.5	5	18.5	7
T Shaft	18	6	13.5	6	15.5	5	19	7
F Shaft	20	10	14	6	16	7	20	12
	20.5	11	14.5	5	17	7	22	

GENERAL TOLERANCE	ANGLE TOLERANCE	PROJECTION	Description:
X. ±0.50	X. ±5°		11MM SMD Encoder with Switch
.X ±0.38	.X ±3°		
.XX ±0.25	.XX ±2°		
Draw by: Date	2017-09-01	KLS P/N:	KLS4-EC1102S-EXX-XX
Check by: Date	2017-09-05	SHEET SIZE	A4
SCALE	OF	SHEET	

**KLS ELECTRONIC CO., LTD.**