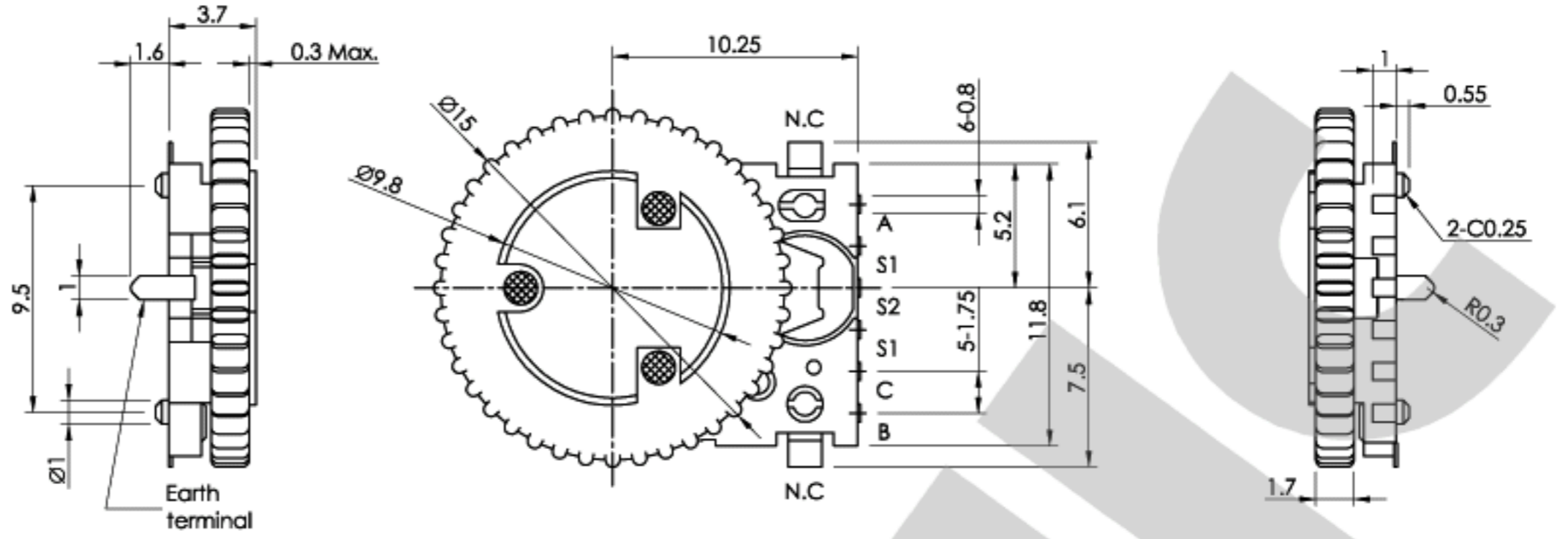
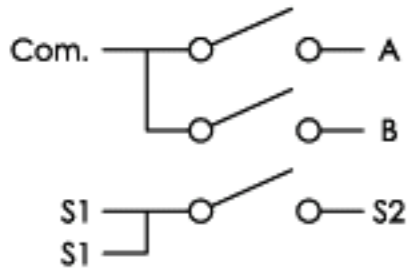




IE-1511

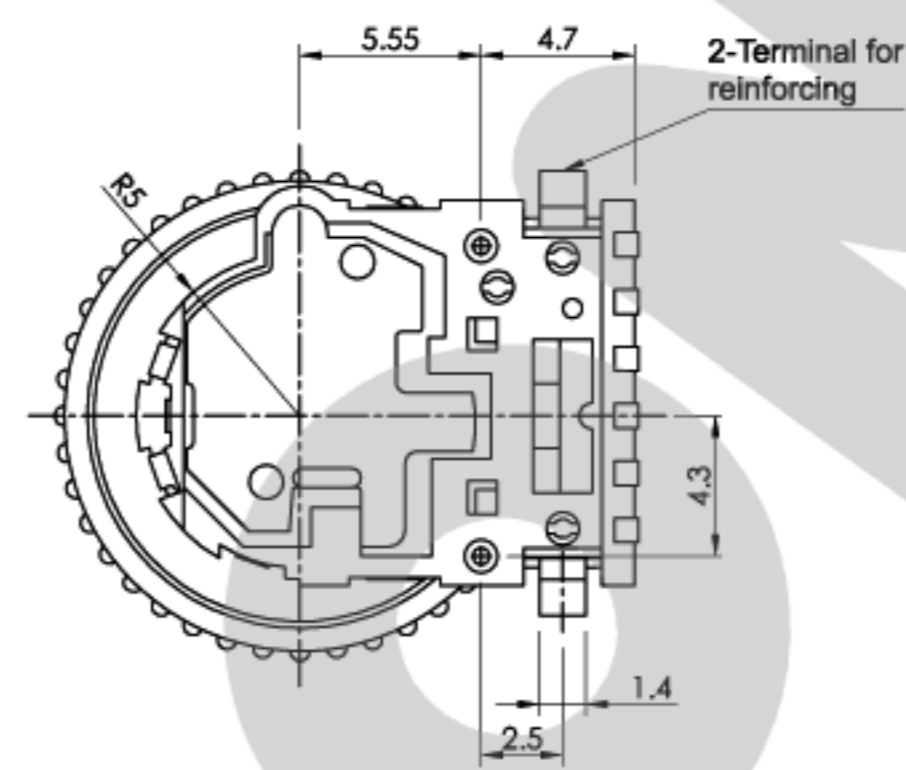
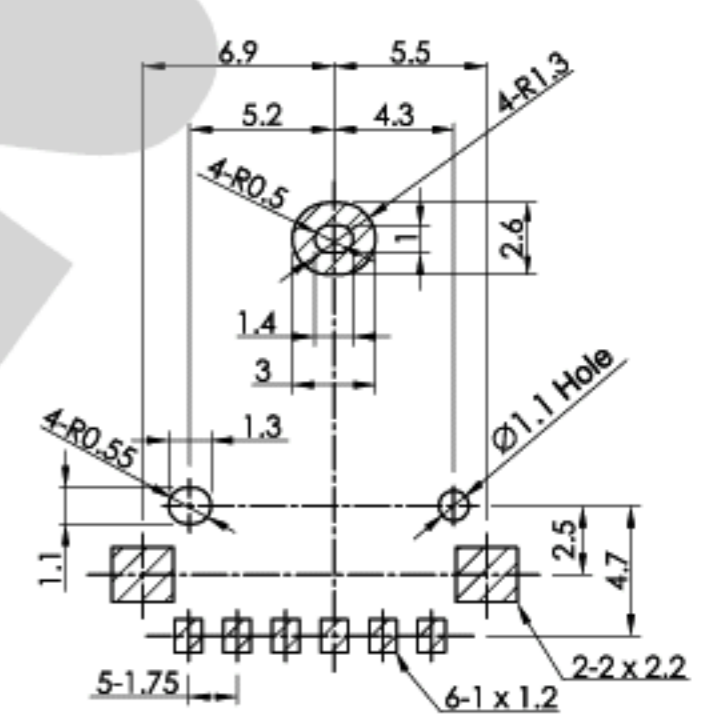


CIRCUIT DIAGRAM



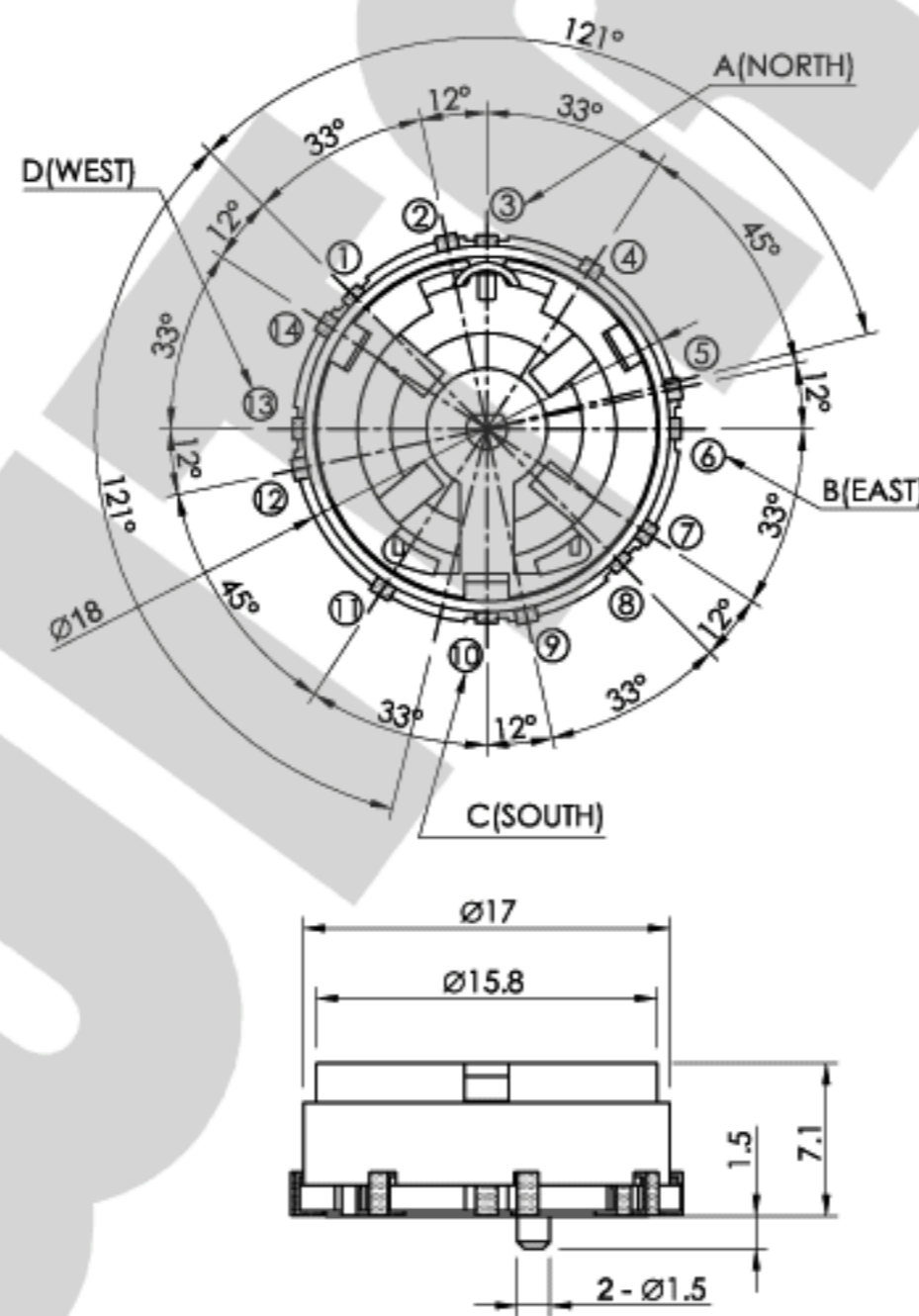
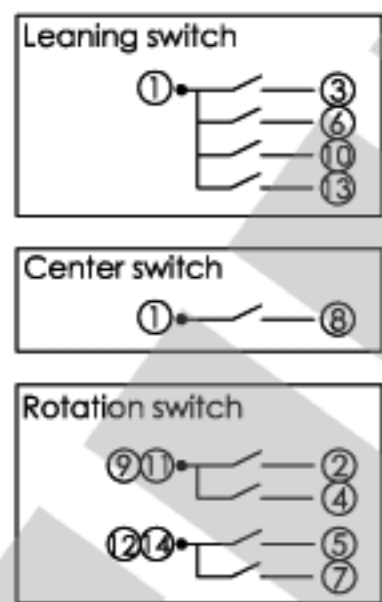
Item	Encoder	Tact S/W
Rating	10V DC 10mA	12V DC 50mA
Circuit	15 pulse	SPST
Contact resistance	1Ω Max.	100mΩ Max.
Operating life	100,000T	100,000 Cycles
Operating force	1~8m N.m	500±170g
Soldering temper.	250°C Max. for 3 Sec.	

P.C.B. LAYOUT

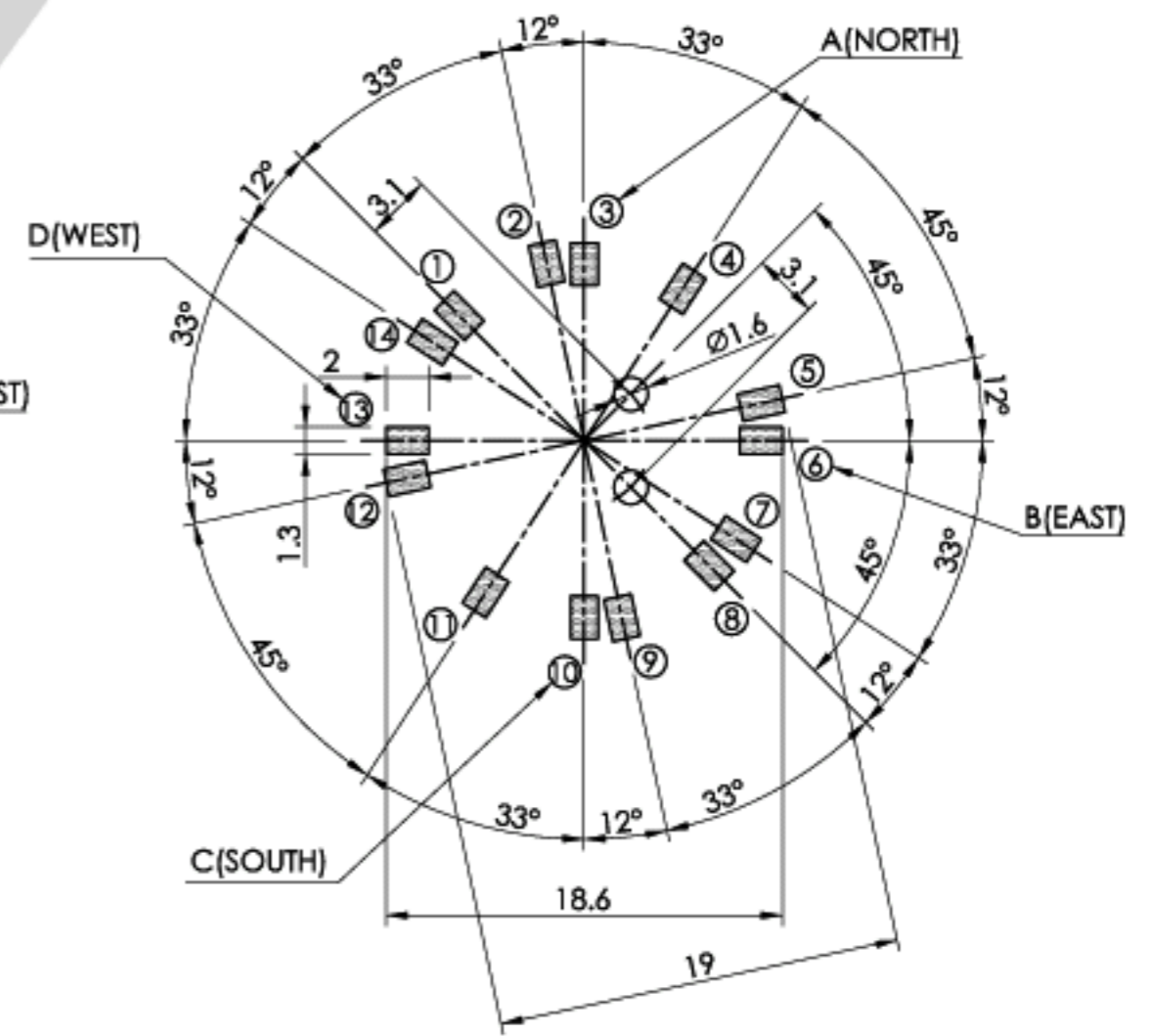


ITM-88

CIRCUIT DIAGRAM



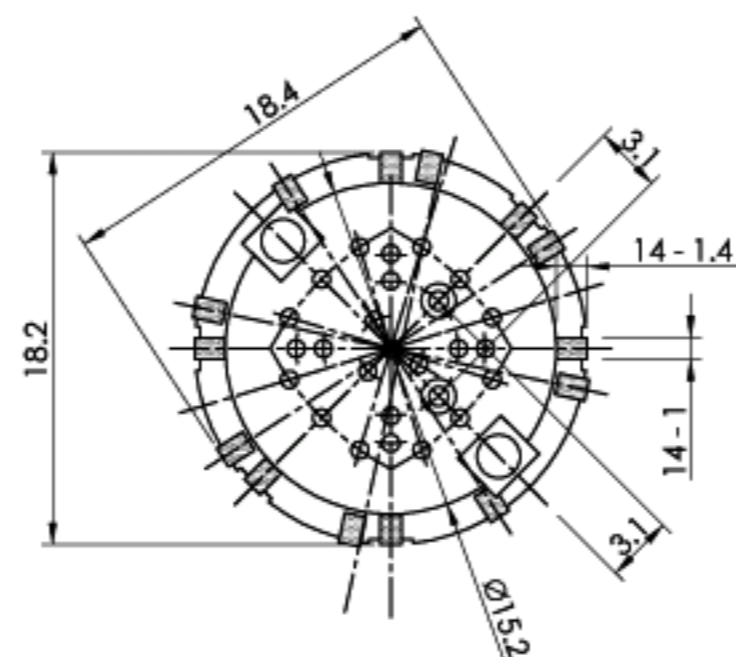
P.C.B. LAYOUT



NO	DESCRIPTION	NO	DESCRIPTION
1	SWITCH COMMON A, B, C, D CENTER	8	SWITCH CENTER
2	ROTATION DETECTION 1	9	SWITCH COMMON 1
3	SWITCH A	10	SWITCH C
4	ROTATION DETECTION 2	11	ROTATION COMMON 1
5	ROTATION DETECTION 3	12	ROTATION COMMON 2
6	SWITCH B	13	SWITCH D
7	ROTATION DETECTION 4	14	ROTATION COMMON 2

Direction	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	•													
B		•												
C			•											
D				•										
E					•									
F						•								
G							•							
H								•						
I									•					

- Rating :** 50mA 12V DC.
- Travel :** 1. 4-Directional: 4°±3°.
- 2. Center: 0.15±0.1mm.
- 3. Rotational torque: 45°±3°.
- Contact resistance :** 1Ω Max.(initial)
- Operating force :** 1. 4-Directional: 500±100g.
- 2. Center: 500±100g.
- 3. Rotational torque: 150±100g
- Life time :** 1. 4-Directional: 30,000 Cycles.
- 2. Center: 30,000 Cycles.
- 3. Rotational torque: 30,000 Cycles.
- Soldering :** 250°C Max. for 3 Sec.



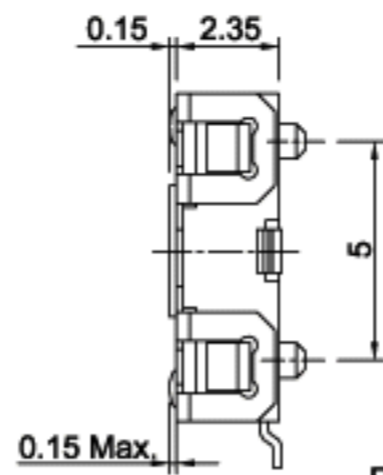
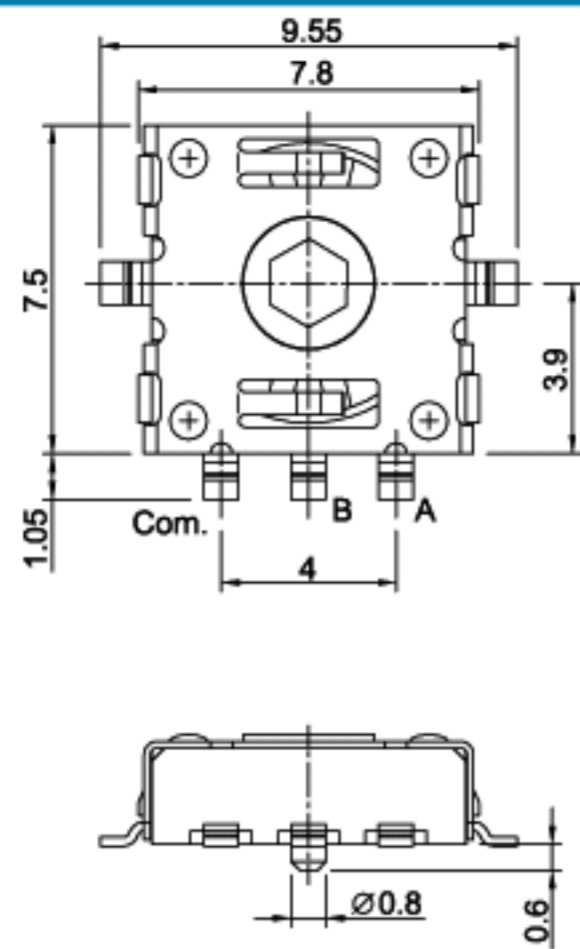
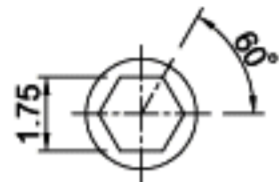
NEW

SMD

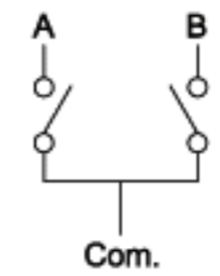


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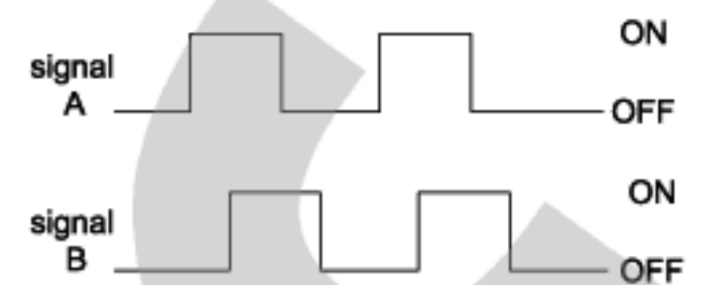
Shaft hole shape and dimension



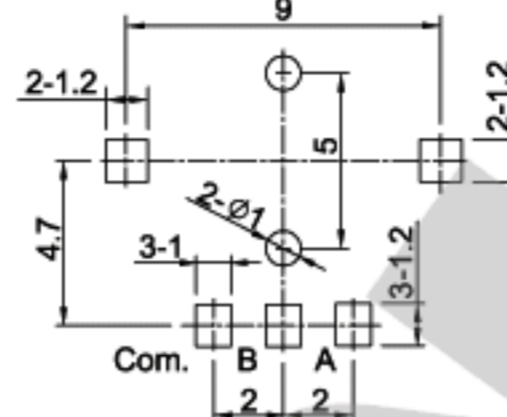
CIRCUIT DIAGRAM



STABLE POSITION OF DETENT



P.C.B. LAYOUT



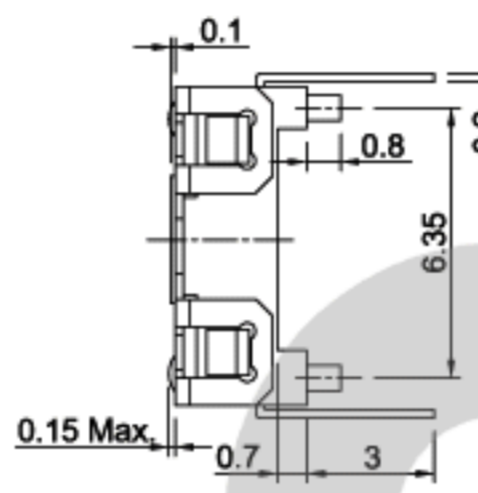
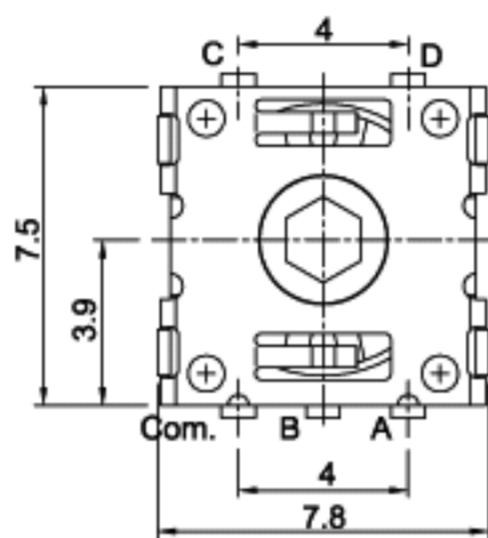
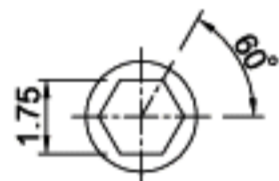
Rating : 10mA 10V DC.
Contact resistance : $\leq 10\Omega$ (initial)
Insulation resistance : $\geq 50M\Omega$ at 50V DC.
Withstand voltage : 50V AC for 1 minute.
Operating force : 20, 25 \pm 10g.
Life : 300,000 Cycles.

NEW



EN028M-39D-25

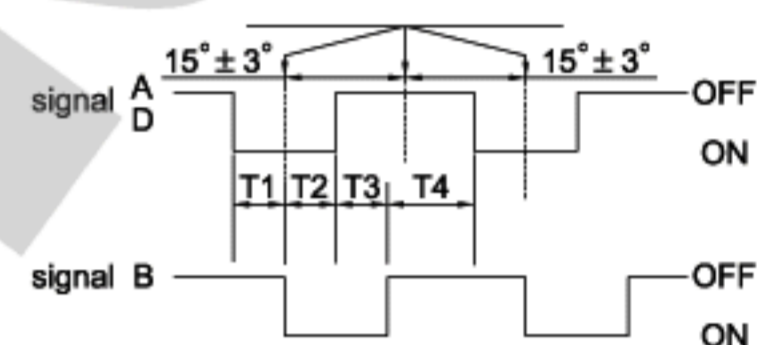
Shaft hole shape and dimension



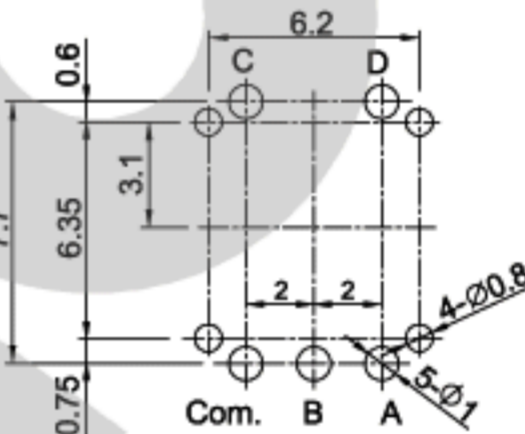
CIRCUIT DIAGRAM



STABLE POSITION OF DETENT



P.C.B. LAYOUT



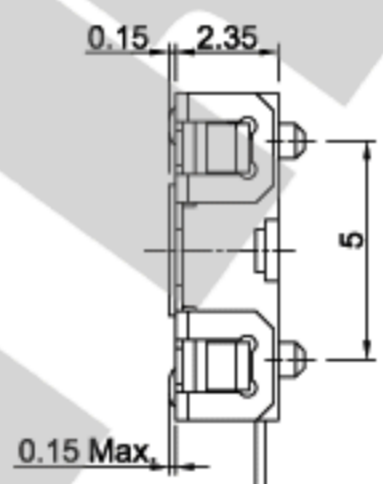
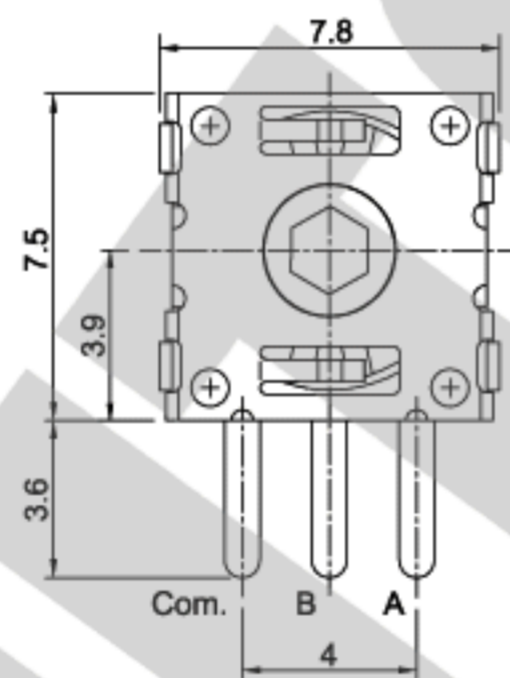
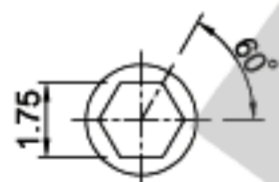
Phase difference T1, T2, T3, T4
(At rotational speed 60 r/min)
Initial.....4m sec. min.
After life.....2.5m sec.min.

NEW

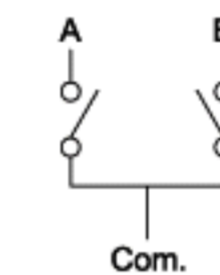


EN028M-39P-25

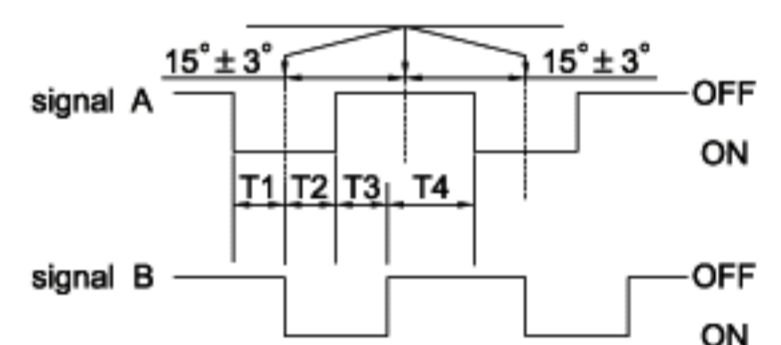
Shaft hole shape and dimension



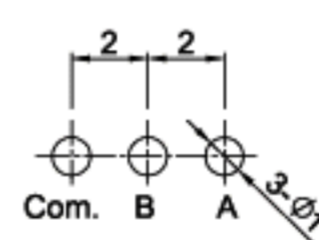
CIRCUIT DIAGRAM



STABLE POSITION OF DETENT



P.C.B. LAYOUT



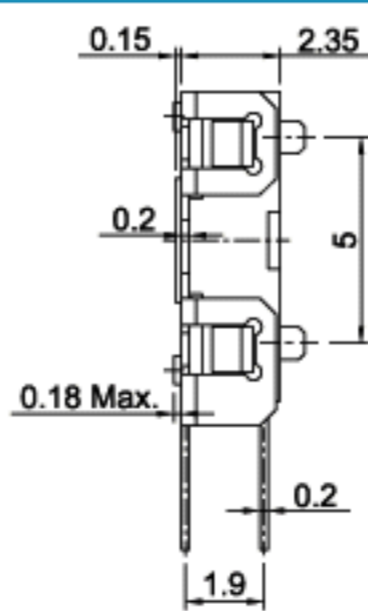
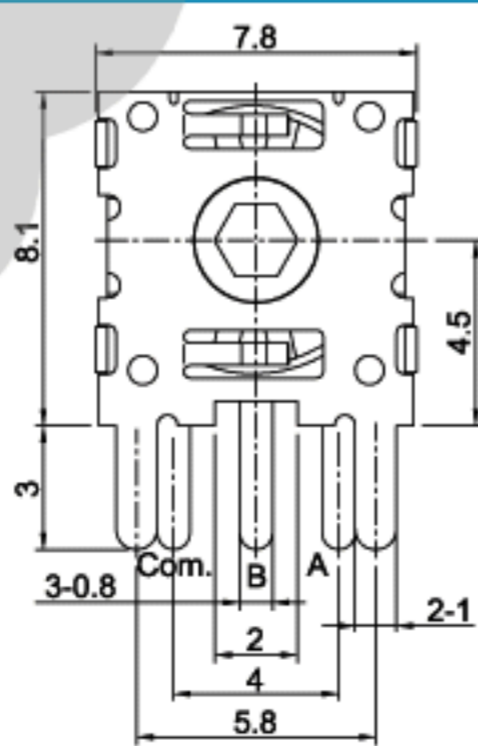
Phase difference T1, T2, T3, T4
(At rotational speed 60 r/min)
Initial.....4m sec. min.
After life.....2.5m sec.min.

NEW

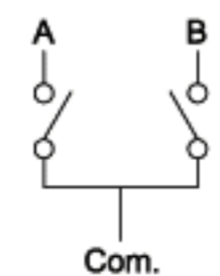


EN028M-45P-20

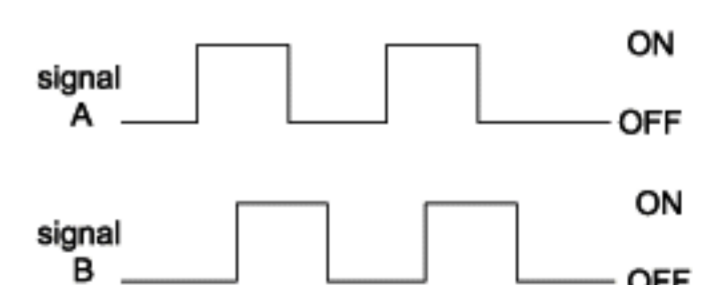
Shaft hole shape and dimension



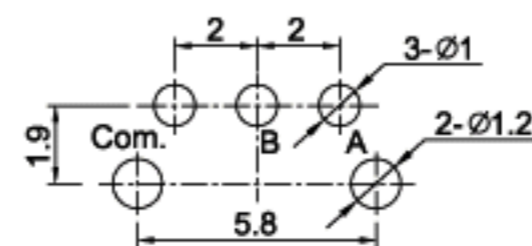
CIRCUIT DIAGRAM



STABLE POSITION OF DETENT



P.C.B. LAYOUT



Rating : 10mA 10V DC.
Contact resistance : $\leq 10\Omega$ (initial)
Insulation resistance : $\geq 50M\Omega$ at 50V DC.
Withstand voltage : 50V AC for 1 minute.
Operating force : 20, 25 \pm 10g.
Life : 300,000 Cycles.