

TECHNICAL DATASHEET

Kit Modular Incremental Encoder

RMI



Mechanical

- Blue-light reflective optical technology
- Bearingless design, overall height only 6mm
- Code-disc and PCB pattern can be flexible customized
- Best fit for Collaborative robot joint, exoskeleton robot and AGV steering control



Out diameter	Refer to drawing, customize on request
Code-disc bore size	14.5/25/30mm, customize on request
Mounting	PCB and code-disc mount separately
Air gap	Typical 1.6mm (ASIC to Disc)
Permitted axial end-play	At least ±0.25mm
Permitted radial runout	At least ±0.15 mm
Max speed	Depends on PPR and output frequency
Disc material	Polycarbonate
Vibration (DIN EN 60068-2-6)	100 m/s ² (10 ... 2,000 Hz)
Shock (DIN EN 60068-2-27)	1,000 m/s ² (6 ms)
Operating temperature	-40 °C ... +105 °C (Cable solders on PCB) -25 °C ... +85 °C (JST connector)
Storage temperature	-40 °C ... +105 °C
Humidity	95% non-condensing
Connection	Cable solders on PCB (recommend AWG28) JST connector (SM10B-SHLS-TF)

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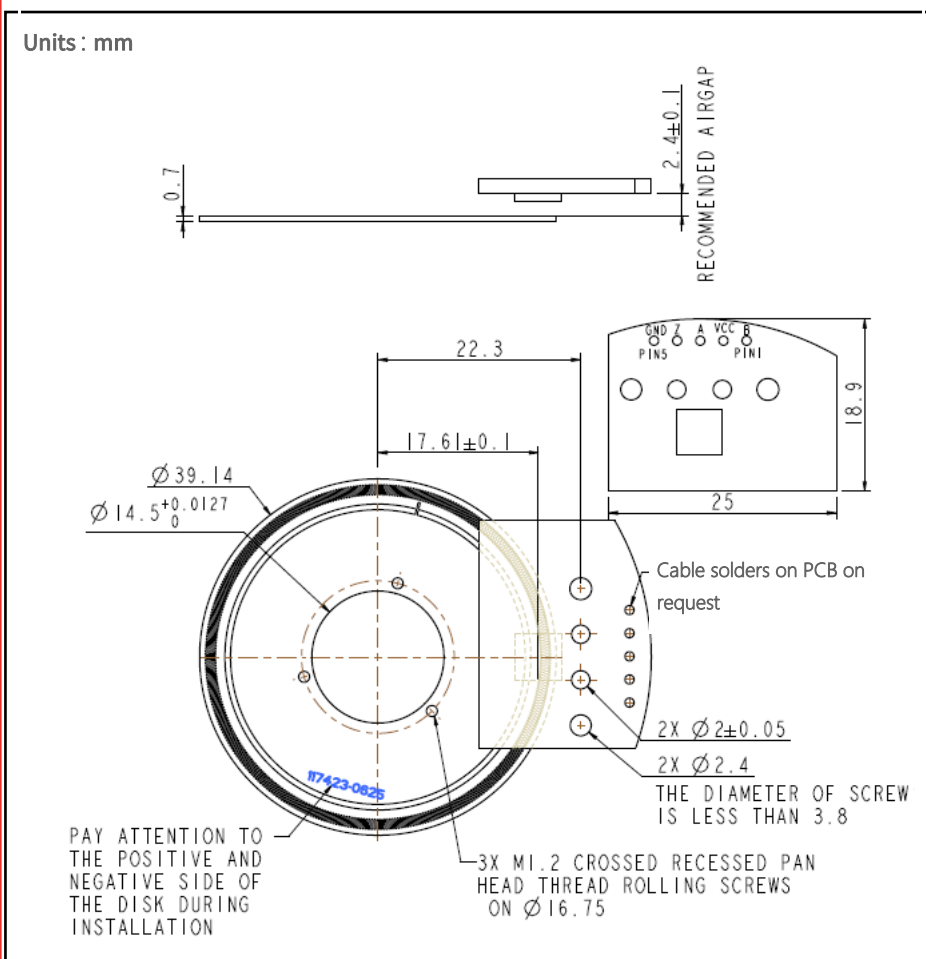
RMI

Electrical

Supply voltage	DC 5V ± 10% or DC 5-30V
Current consumption	Max 100 mA
Technology	Reflective optical
Resolution	Refer to part# list
Output	RS422 / HTL / Voltage output (TTL compatible)
Max Output frequency	Design #1,2,4 just have voltage output, 150kHz
	Design #3 have RS422 or HTL output, 400kHz
Accuracy	Depends on mounting

Design #1

- Disc OD 39.14mm
- Disc ID 14.5mm
- 5VDC, TTL



Ordering information	
RMI1250/0A3915CA0000S03	1250PPR, DC5V, TTL, cable not solders on PCB
RMI2500/0A3915CA0000S03	2500PPR, DC5V, TTL, cable not solders on PCB
RMI5000/0A3915CA0000S03	5000PPR, DC5V, TTL, cable not solders on PCB

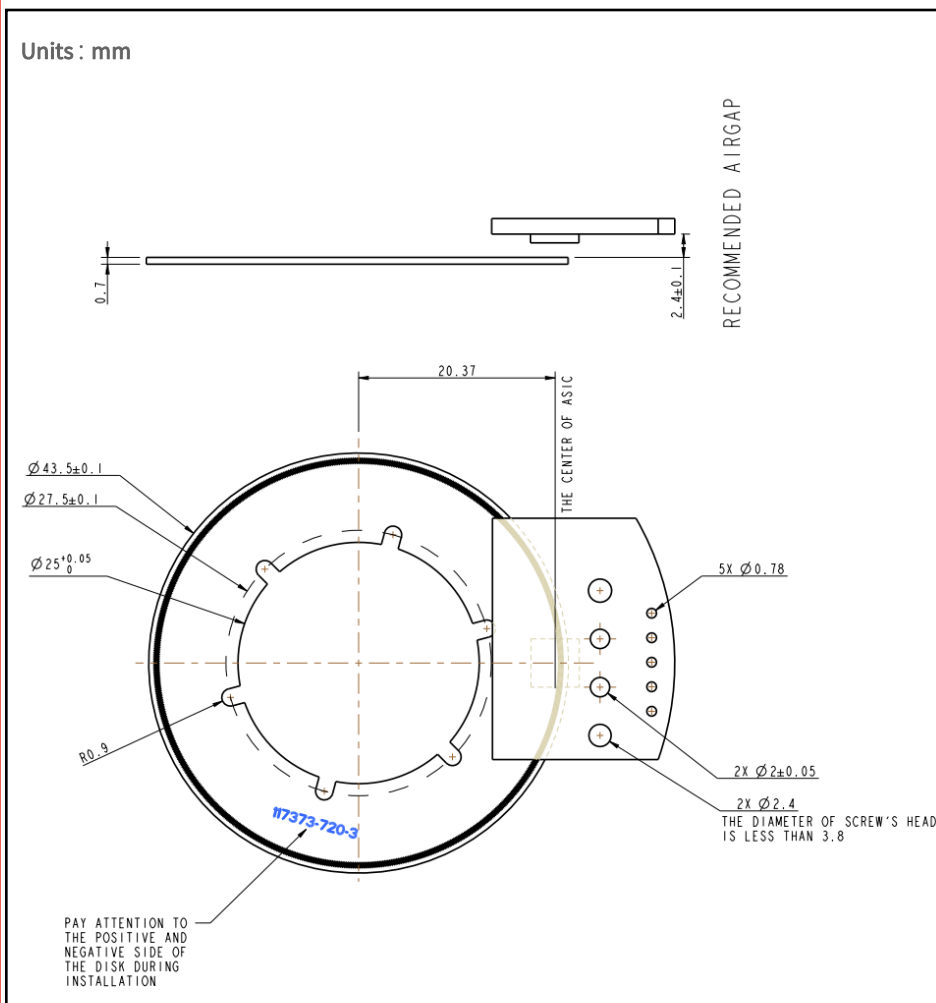
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Design #2

- Disc OD 43.5 mm
- Disc ID 25.0 mm
- 5VDC, TTL



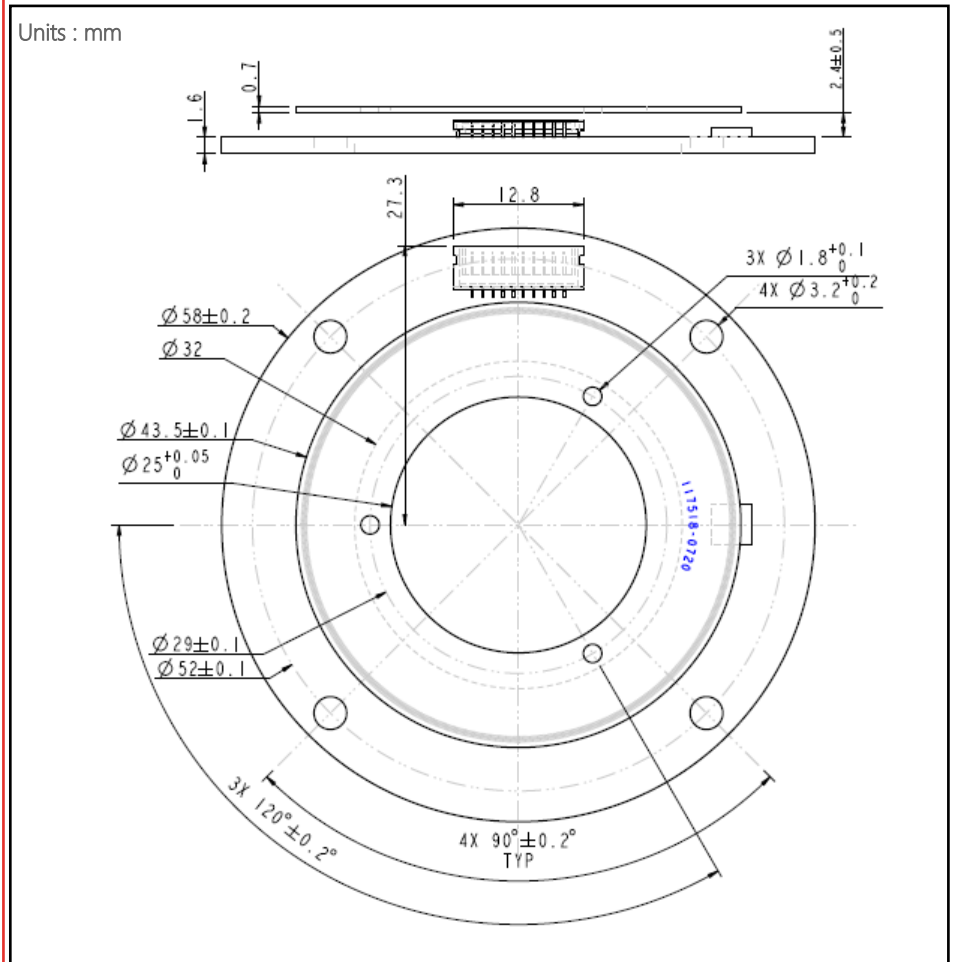
Ordering information

RMI1440/0A4425CA0000S04	1440PPR, DC5V, TTL, Cable not solders on PCB
RMI2880/0A4425CA0000S04	1440PPR, DC5V, TTL, Cable not solders on PCB
RMI5760/0A4425CA0000S04	1440PPR, DC5V, TTL, Cable not solders on PCB



Design #3

- Disc OD 43.5mm
- Disc ID 25mm
- 5VDC or 10-30VDC
- RS422 or HTL



Ordering information	
RMI1440/0A4425RA0300S05	1440PPR, 5VDC, RS422, mated 0.3m cable
RMI2880/0A4425RA0300S05	2880PPR, 5VDC, RS422, mated 0.3m cable
RMI5760/0A4425RA0300S05	5760PPR, 5VDC, RS422, mated 0.3m cable
RMI1440/0B4425IB3000S05	1440PPR, 10-30VDC, HTL, mated 3m cable
RMI2880/0B4425IB3000S05	2880PPR, 10-30VDC, HTL, mated 3m cable
RMI5760/0B4425IB3000S05	5760PPR, 10-30VDC, HTL, mated 3m cable

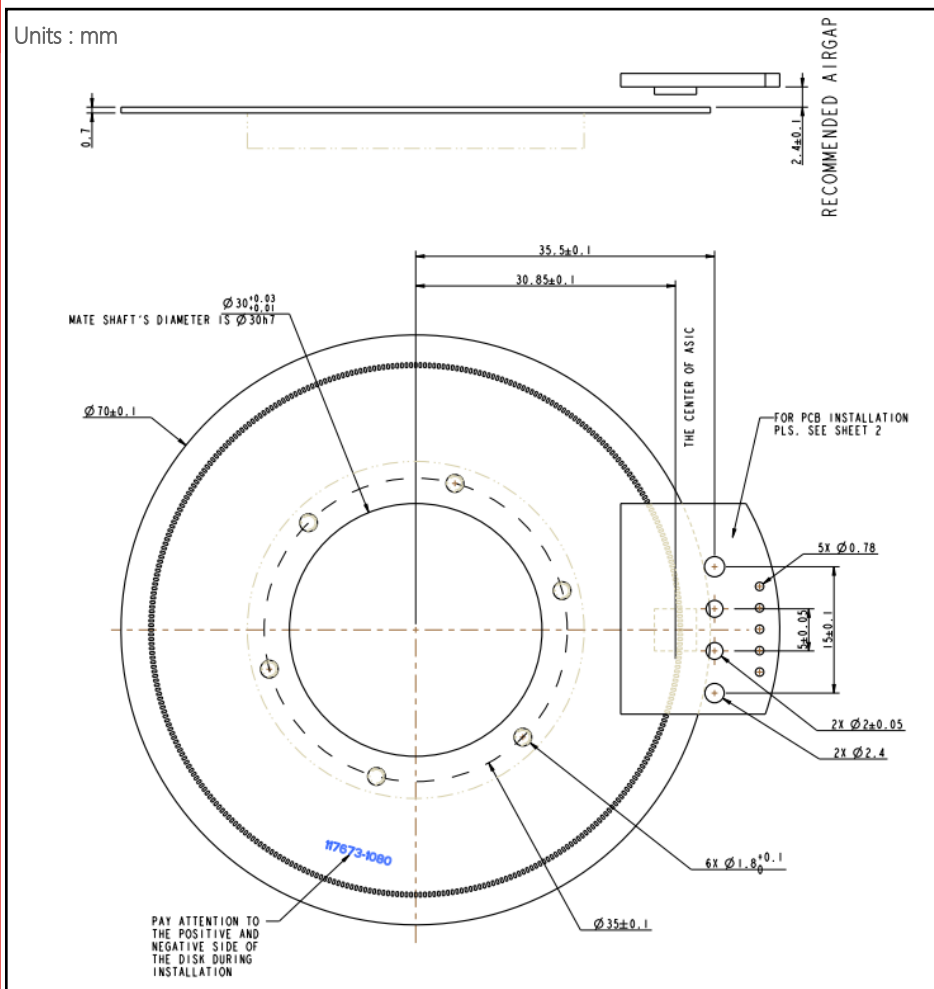
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Design #4

- Disc OD 70mm
- Disc ID 30mm
- 5VDC TTL

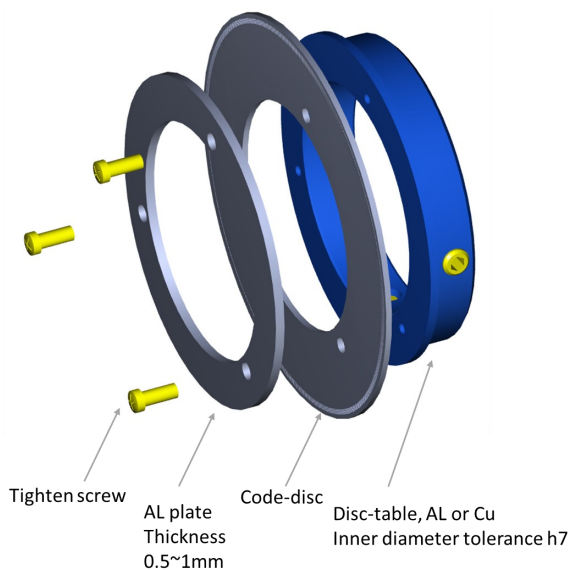


Ordering information

RMI2160/0A7030CB0000S06

2160PPR,DC5V, TTL, Cable not solders on PCB

Disc-table recommend design



*Disc-table not includes in the package

Data sheet

Version 1.1
2020/11/06



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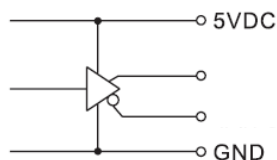
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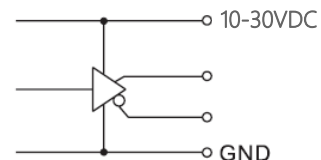
RMI

Output circuit

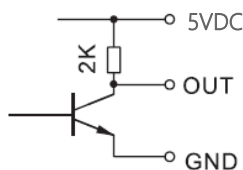
Type R : RS422



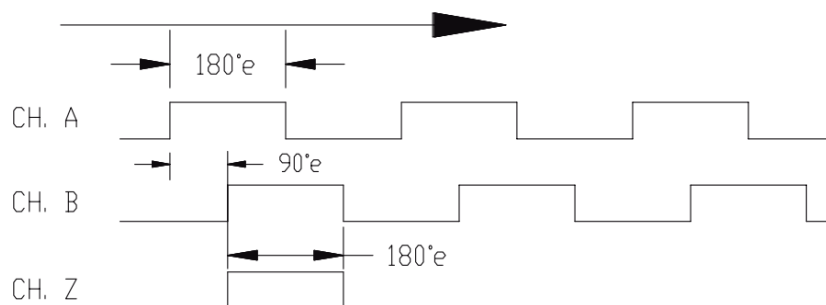
Type I : HTL



Type C: Voltage output (TTL compatible)



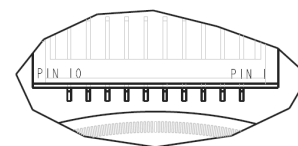
Format



Z=180°, toward to code-disc,CW rotation

Wiring

Name	Color	JST pin
VCC	RED	1
A	BLU	3
B	GRN	5
Z	PUR	7
GND	BLK	2
\overline{A}	BLU/WHT	4
\overline{B}	GRN/WHT	6
\overline{Z}	PUR/WHT	8



PCB connector
 Manufacture: JST Sales America Inc.
 Type: SM10B-SHLS-TF
 Mated connector: SHLP-10V-S-B
 Mated Pin: SSSL-003GA1-P0.2

