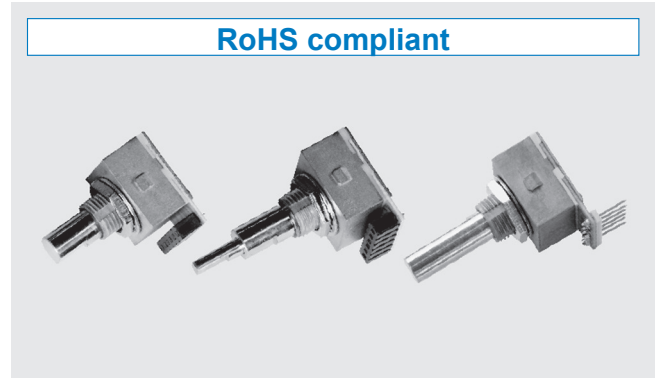


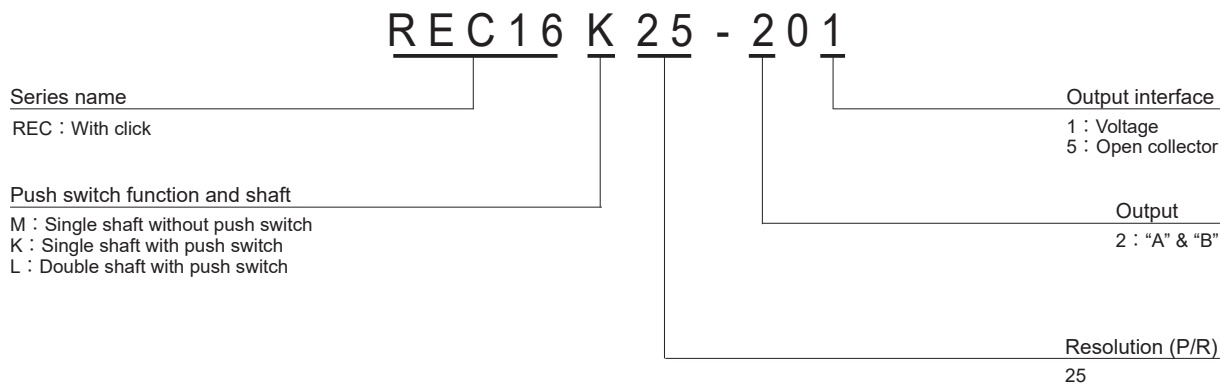
MANUAL SETTING TYPE OPTICAL ENCODERS **REC16K/REC16L/REC16M**

FEATURES

- 16mm square compact size
- Excellent click & switch feelings
- Long life of 2 million cycles



PART NUMBER DESIGNATION



LIST OF PART NUMBERS

Resolution	Click	Push switch function	Shaft	Output interface	Part number
25 (P/R)	With Click	No	Single Shaft	Voltage (PIN HEADER Type)	REC16M25-201
		Yes		Voltage (PIN HEADER Type)	REC16K25-201
			Yes	Double Shaft	Open Collector (SOCKET Type)
		Open Collector (SOCKET Type)			⊕ REC16L25-205-B

The products indicated by ⊕ mark are manufactured upon receipt of order basis.

※ The knob are sold separately as an optional item only for the single shaft and voltage output pin header type.
(P/N: REC16M25-201, REC16K25-201) of the above table. (Ref. last page)

REC16K/REC16L/REC16M

OPTICAL ENCODERS

STANDARD SPECIFICATIONS

Electrical characteristics

Input voltage	DC5 V \pm 5 %	
Input current	30 mA maximum	
Output wave form	Square wave	
Output phases	A, B	
Resolution(P/R)	25	
Phase difference of outputs A & B	100 μ sec minimum Refer to "OUTPUT"	
Maximum frequency response	100 Hz	
Output signal	"1 (High)"	+ 4.5 V minimum
	"0 (Low)"	+ 0.5 V maximum
Light source	LED	
Output Sink Current	30 mA maximum	

Switch characteristics

Maximum contact rating	DC15 V, 20 mA
Contact resistance	2 Ω maximum (Initial value)

Note) Manual setting only.

Mechanical characteristics

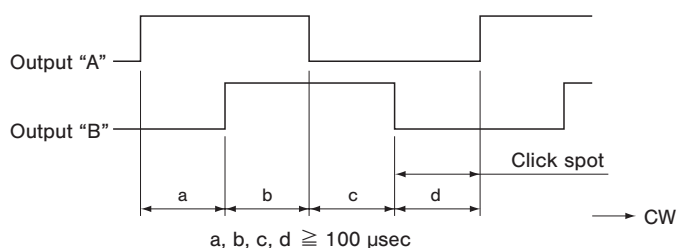
Click torque	7.35 mN·m \pm 2.5 maximum (75 \pm 25 gf·cm) (REC : With click)	
Click number	25	
Shaft loading (Pull-push)	19.6 N maximum (2 kgf)	
Switch operation force	2.45 \pm 1.47 N (250 \pm 150 gf)	
Switch stroke	0.3 \pm 0.2 mm	
Rotational life (Mechanical)	2 million cycles	
Switching life	1 million cycles	
Shaft loading (When mounting)	Radial	4.90 N maximum (500 gf)
	Axial	2.94 N maximum (300 gf)
Net weight	Approx. 12 g	
Strength of tighten screw	1 N·m {10.2 kgf·cm} maximum	

Environmental characteristics

Operating temp. range	0 ~ 50 °C
Storage temp. range	- 20 ~ 80 °C
Protection grade	IP40

OUTPUT

Click spot for 25P/R



The click spot is located somewhere outputs A & B are at Lo level.

REC16K/REC16L/REC16M

OPTICAL ENCODERS

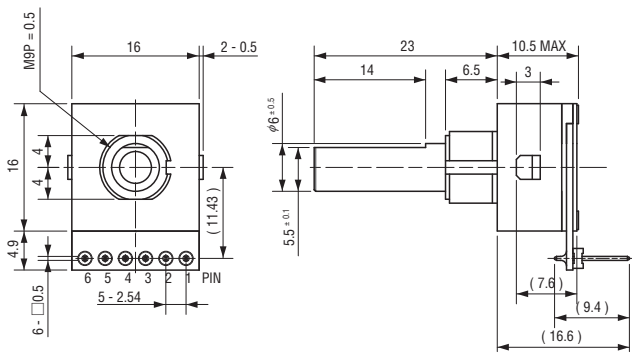
RELIABILITY TEST

The output shall satisfy the criteria below after the following tests.

Test item		Test conditions	
Vibration	Power OFF	Amplitude : 1.52 mm or 98.1 m/s ² (10 G) whichever is smaller. 10 ~ 500 Hz excursion 15 min/cycle, 8 cycles each for X, Z, directions.	
Shock	Power OFF	3 times each in directions (X, Z) at 490 m/s ² (50 G), 11 ms.	
High temperature exposure	Power OFF	80 °C 96 h	To be measured after leaving samples for 1 h at normal temperature and humidity after the test.
	Power ON	50 °C 96 h	
Low temperature exposure	Power OFF	- 20 °C 96 h	
	Power ON	0 °C 96 h	
Humidity	Power OFF	To be measured after wiping out moisture and leaving samples for 1 h at normal temperature and humidity after the test.	
Thermal shock	Power OFF	To be done 10 cycles with the following condition (To be measured after leaving samples for 1 h at normal temperature and humidity after the test.) 80 °C 0.5 h, - 20 °C 0.5 h	

OUTLINE DIMENSIONS

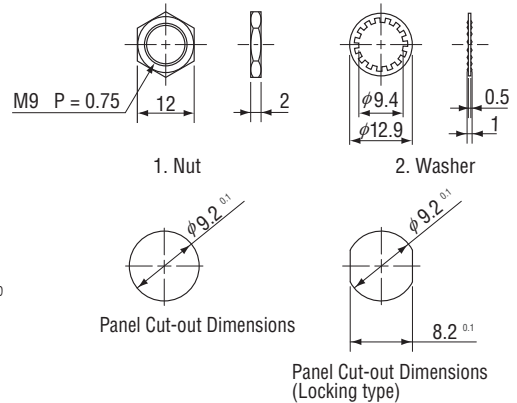
Single shaft and PIN HEADER REC16K25-201, REC16M25-201



PIN HEADER :
Made by IRISO ELECTRONICS CO., LTD
9208B - 1 - 6Z032 - PT1

Unless otherwise specified, tolerance: ± 0.4 (Unit: mm)

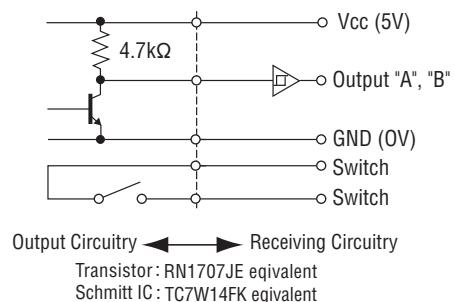
< Accessories >



PIN ASSIGNMENT

Pin No.	Without switch	With switch
1	Power 0 (V)	Power 0 (V)
2	N C	For switch
3	N C	For switch
4	Output "B"	Output "B"
5	Output "A"	Output "A"
6	Power + 5 V	Power + 5 V

OUTPUT CIRCUITRY AND RECEIVING CIRCUITRY

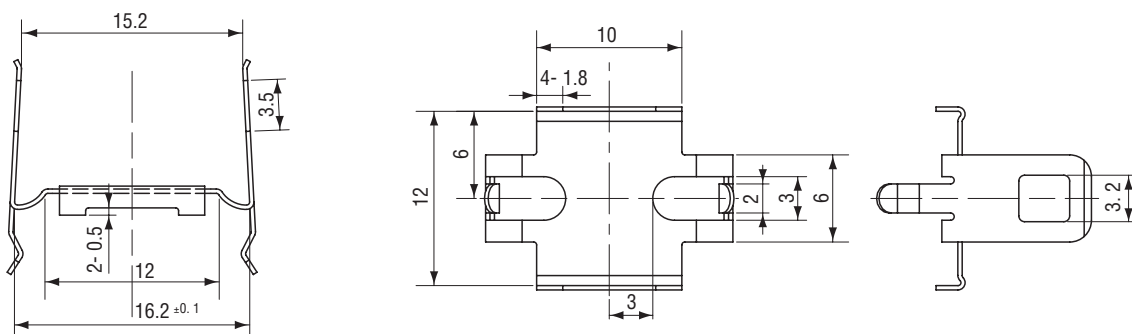


REC16K/REC16L/REC16M

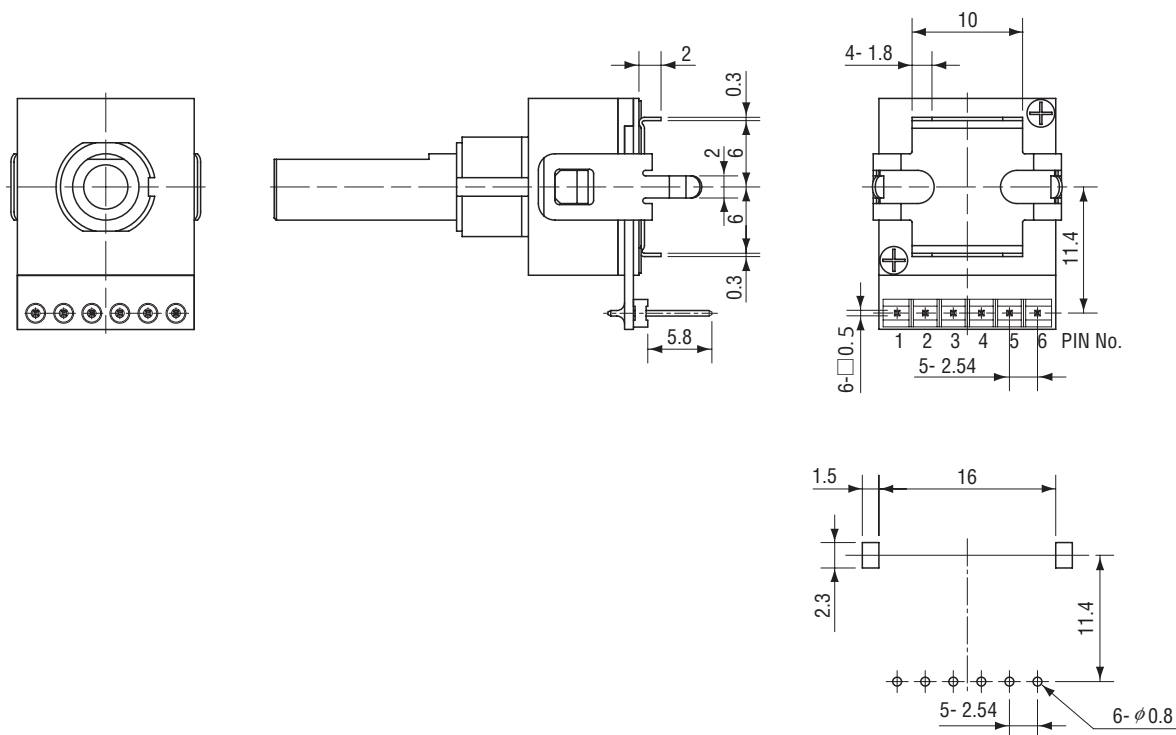
OPTICAL ENCODERS

Option(Snap-in Holder)

Available mounting on PC board with Snap-in Holder as an optional item separately.



With Snap-in Holder



Mounting hole dimensions
 (Tolerance : ± 0.1)
 (Thickness : $t=1.6$)

REC16K/REC16L/REC16M

OPTICAL ENCODERS

● KNOB FOR SETTING ENCODERS For REC16M25-201, REC16K25-201

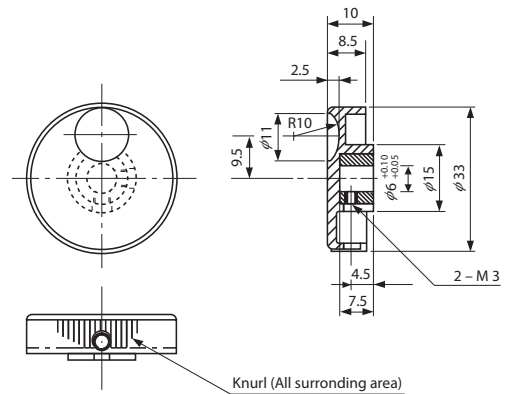
The knobs are sold separately as an optional item.

You can choose gray or black color.

The hexagon socket head screws are attached. (2 pieces)



Unless otherwise specified, tolerance: ± 0.4 (Unit: mm)



※ Use a hexagon wrench for 1.5 fastening.