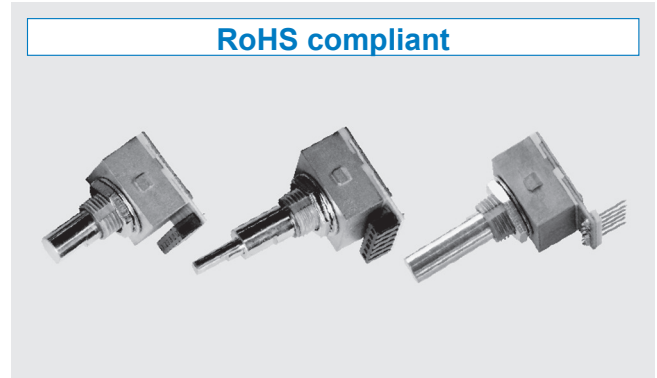


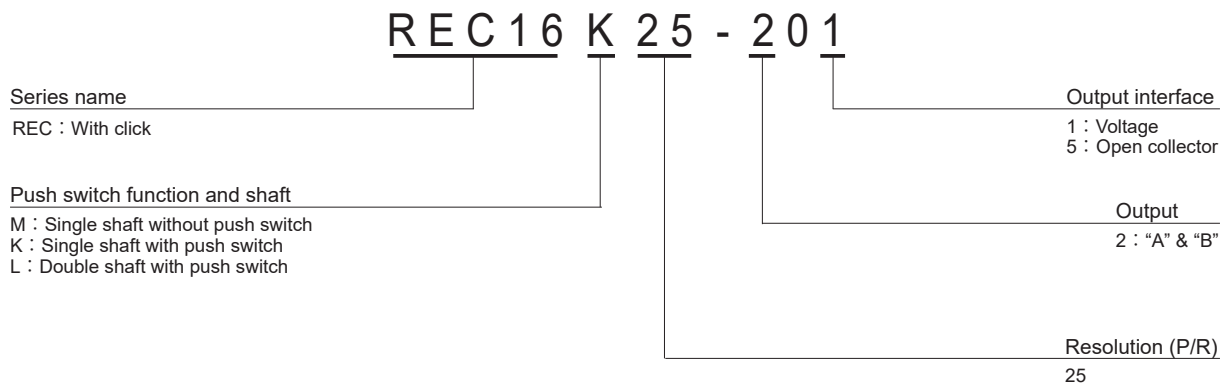
MANUAL SETTING TYPE OPTICAL ENCODERS **REC16K/REC16L/REC16M**

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			REC16K25-201
			Double Shaft	Open Collector (SOCKET Type)	㊟ REC16K25-205-B
		㊟ REC16L25-205-B			

The products indicated by ⑤ 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 ± 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 μsec 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

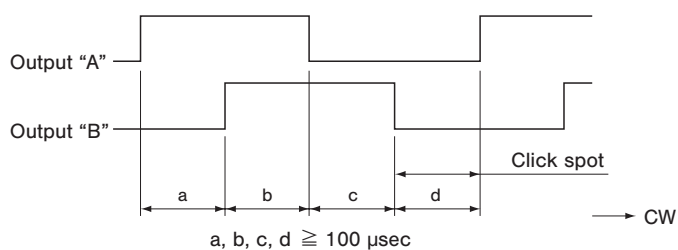
Click torque		7.35 mN·m ± 2.5 maximum (75 ± 25 gf·cm) 〈REC : With click〉
Click number		25
Shaft loading (Pull-push)		19.6 N maximum (2 kgf)
Switch operation force		2.45 ± 1.47 N (250 ± 150 gf)
Switch stroke		0.3 ± 0.2 mm
Rotational life (Mechanical)		2 million cycles
Switching life		1 million cycles
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 $\sim$ 50 $^{\circ}$ C
Storage temp. range	- 20 $\sim$ 80 $^{\circ}$ 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

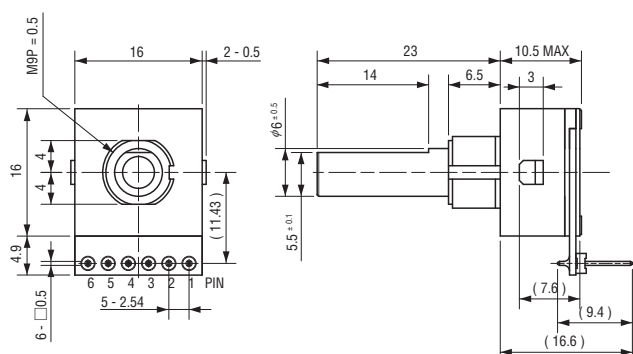
RELIABILITY TEST

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

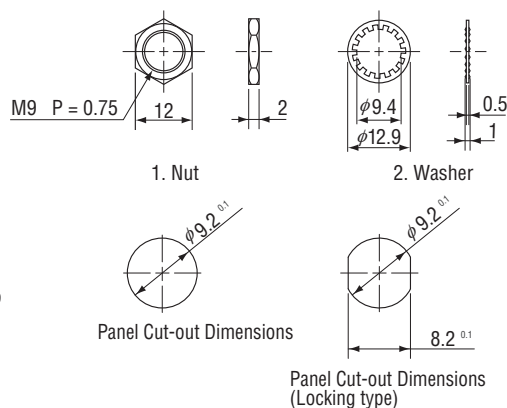
Single shaft and PIN HEADER REC16K25-201, REC16M25-201



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

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

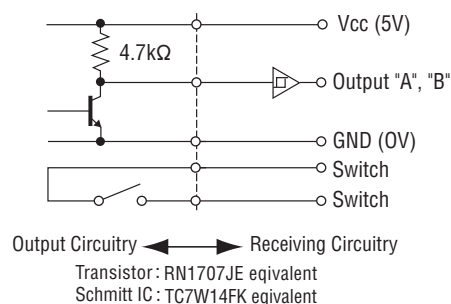
Accessories



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



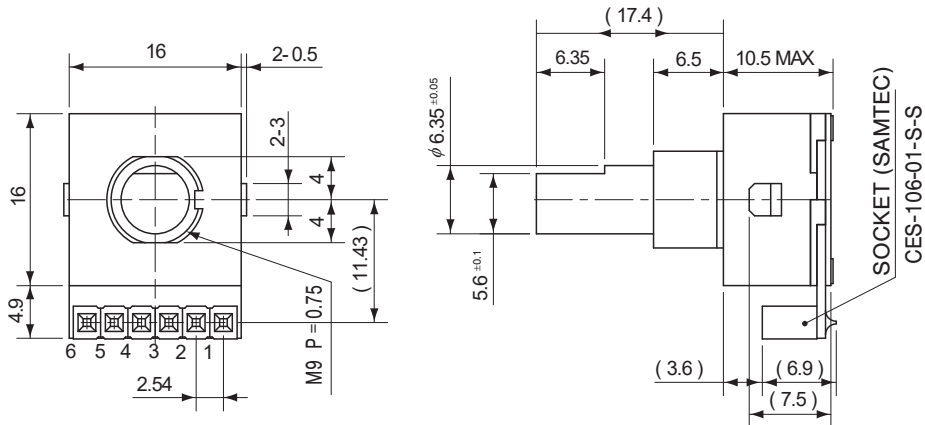
REC16K/REC16L/REC16M

OPTICAL ENCODERS

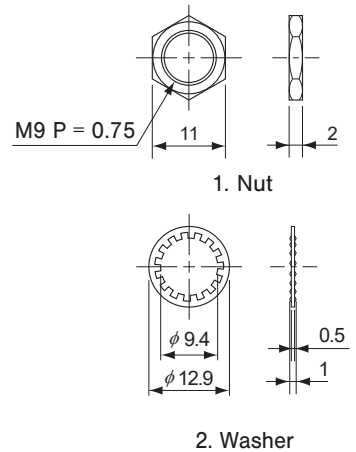
OUTLINE DIMENSIONS

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

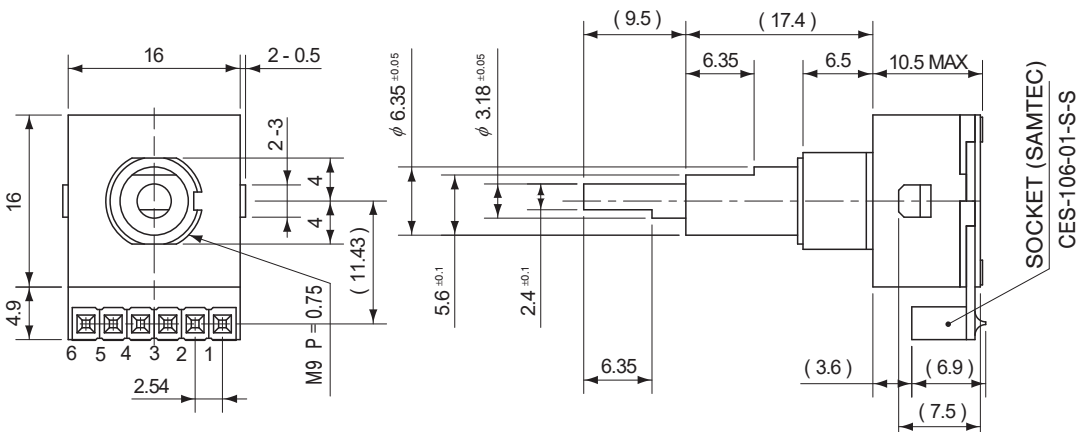
Single shaft and SOCKET REC16K25-205-B



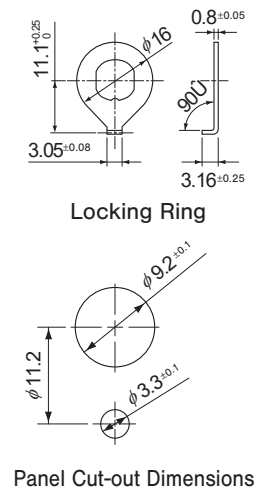
< Accessories >



Double shaft and SOCKET REC16L25-205-B



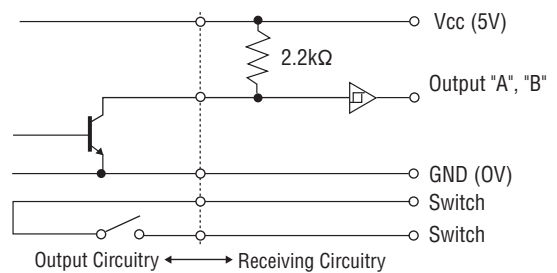
< Option >



PIN ASSIGNMENT

Pin No.	Function
1	Power 0 (V)
2	For switch
3	For switch
4	Output "B"
5	Output "A"
6	Power +5 V

OUTPUT CIRCUITRY AND RECEIVING CIRCUITRY



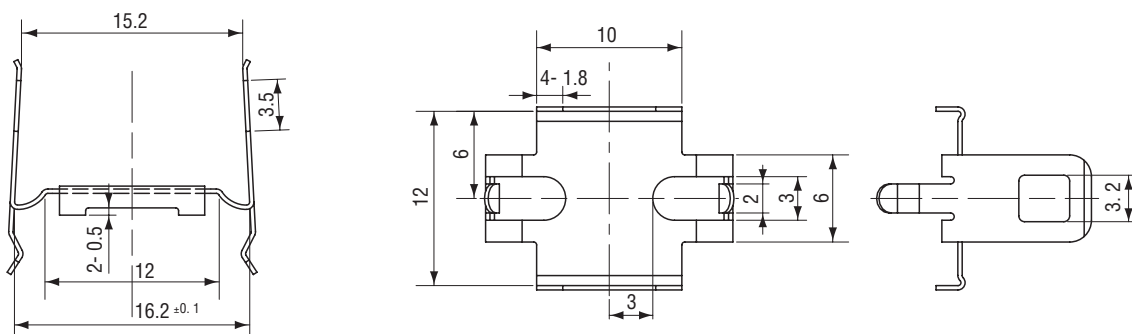
Transistor : RN1707JE equivalent
Schmitt IC : TC7W14FK equivalent

REC16K/REC16L/REC16M

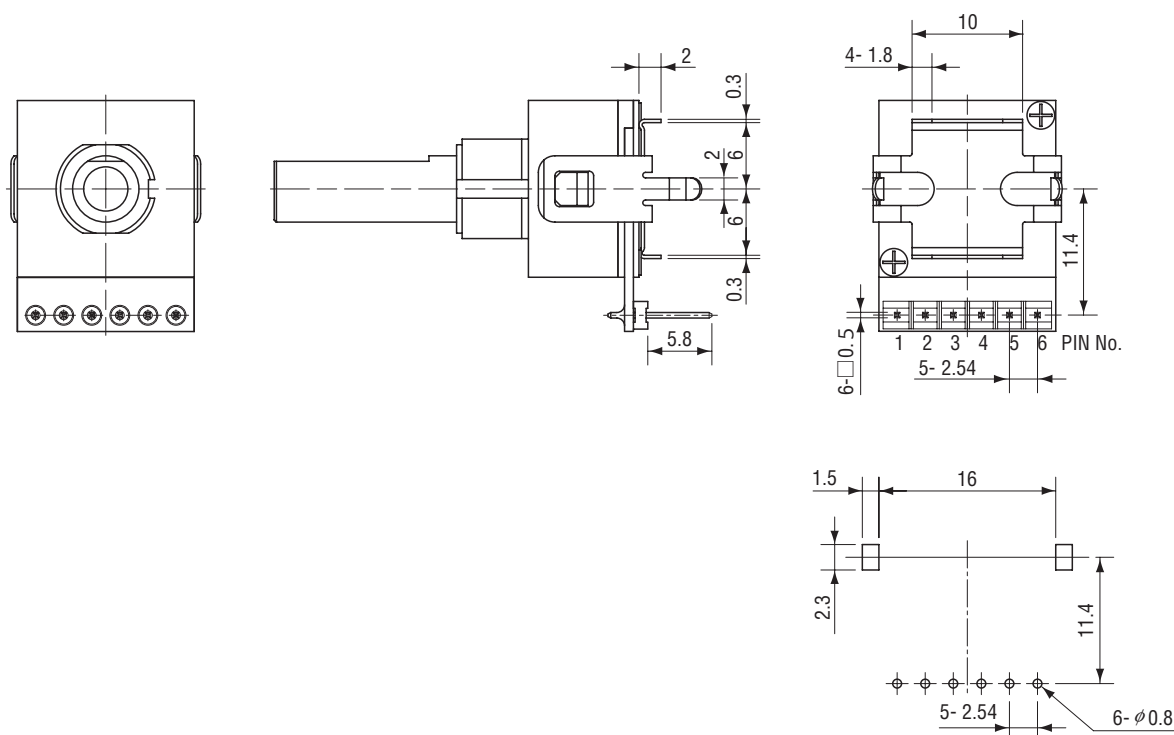
OPTICAL ENCODERS

■ Option(Snap-in Holder)

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



● With Snap-in Holder



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

REC16K/REC16L/REC16M

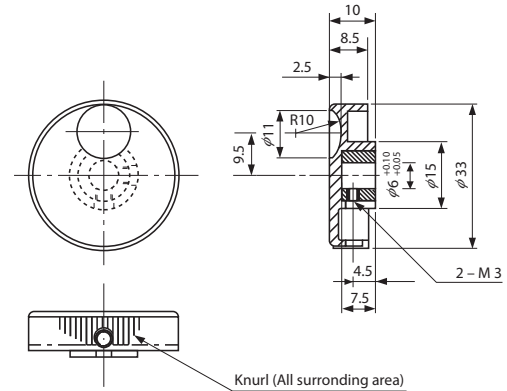
OPTICAL ENCODERS

● 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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Nidec:](#)

[REC16L25-205-B](#) [REC16K25-201](#) [REC16K25-205-B](#) [REC16M25-201](#)