MANUAL SETTING TYPE OPTICAL ENCODERS REC/RES

FEATURES

- Contactless, manual adjustment only
- Compact, light weight
- With click (REC20, REC20C, REC20D, RECW20D)
- Panel seal type (RESW20D, RECW20D)
- RoHS compliant

RoHS compliant



PART NUMBER DESIGNATION

RE C W 20 D - 50 - 201 - 1

- Series name
- Click
  - C : With click
  - S : Without click
- Panel seal
  - W : Panel seal (With O ring)
  - Blank : Non Panel seal
- Size
  - φ 20 mm
- Model
- Resolution (P/R)
  - 25, 50
- Output phase
  - 2 : "A" & "B"
- Output connection
  - 1 : Cable wire

LIST OF PART NUMBERS

Resolution / Item	Output wave form	Output terminal	Click	Panel seal	Part number
50 (P/R)	Saturated wave	Pin terminal	Without click	Non Panel seal	RES20-50-200
100 (P/R)					RES20-100-200
50 (P/R)	Pseudosquare wave				RES20-50-200-Z
100 (P/R)					RES20-100-200-Z
25 (P/R)	Square wave	Cable wire	Without click		RES20B-25-201-1 RES20D-25-201-1
			With click		REC20-25-201-1 REC20D-25-201-1
50 (P/R)			Without click		RES20D-50-201-1
			With click		REC20C-50-201-1 REC20D-50-201-1
25 (P/R)			Without click	Panel seal	RESW20D-25-201-1
			With click		RECW20D-25-201-1
50 (P/R)			Without click		RESW20D-50-201-1
			With click		RECW20D-50-201-1

※ Verify the above part numbers when placing orders.The knob is available.

REC/RES
OPTICAL ENCODERS

■ STANDARD SPECIFICATIONS

● Electrical characteristics

Item \ Part number		RES20		RES20-Z		REC20	RES20B	REC20C	RES20D	REC20D	RESW20D	RECW20D
Input voltage		DC5 V ± 5 %										
Input current	mA maximum	40		50		70			50			
Output wave form		Saturated wave		Pseudosquare wave		Square wave						
Output phases		A, B										
Resolution(P/R)		50	100	50	100	25		50	25, 50			
Phase difference of outputs A & B		90° ± 45°										
Maximum frequency response	Hz	500		100		500			200			
Output signal	"1 (High)"	2 Vp-p minimum	1 Vp-p minimum	+ 4.0 V minimum		+ 4.5 V minimum						
	"0 (Low)"			+ 1.0 V maximum		+ 0.5 V maximum						
Light source		LED										
Output Sink Current		—				40 mA maximum			3 mA maximum			

● Mechanical characteristics

Item \ Part number		RES20	RES20-Z	REC20	RES20B	REC20C	RES20D	REC20D	RESW20D	RECW20D
Starting torque	mN·m {gf·cm}	2.94 {30} maximum	4.90 {50} maximum	———	2.94 {30} maximum	———	1.18 ± 0.78 {12 ± 8}	———	2.94 ± 1.96 {30 ± 20}	———
Click torque	mN·m {gf·cm}	———	———	19.6 {200} maximum	———	19.6 {200} maximum	———	9.81 ± 4.9 {100 ± 50}	———	11.8 ± 4.9 {120 ± 50}
Click number		———	———	25	———	50	———	25, 50	———	25, 50
Shaft loading (When mounting)	Radial	9.81 N {1 kgf} maximum					4.90 N {500 gf} maximum			
	Axial	4.9 N {500 gf} maximum					2.94 N {300 gf} maximum			
Net weight		Approx. 20 g	Approx. 20 g	Approx. 25 g			Approx. 10 g			
Strength of tighten screw		0.98 N·m {10 kgf·cm} maximum					0.49 N·m {5 kgf·cm} maximum			

● Environmental characteristics

Item \ Part number	RES20	RES20-Z	REC20	RES20B	REC20C	RES20D	REC20D	RESW20D	RECW20D
Operating temp. range	0 ~ 50 °C								
Storage temp. range	– 20 ~ 80 °C								
Protection grade	IP40								

Note) Manual setting only.

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 ± 2 °C 0.5 h, − 20 °C ± 2 °C 0.5 h	

OUTLINE DIMENSIONS

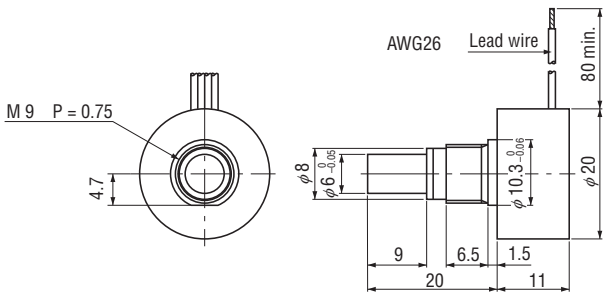
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● RES20D/RESW20D

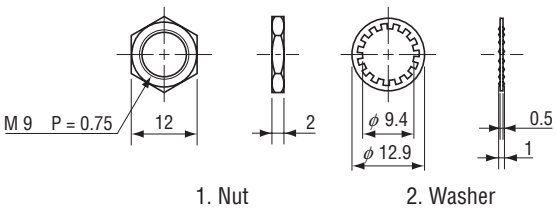
(Without click / Without click, With panel seal)

● REC20D/RECW20D

(With click / With click, With panel seal)



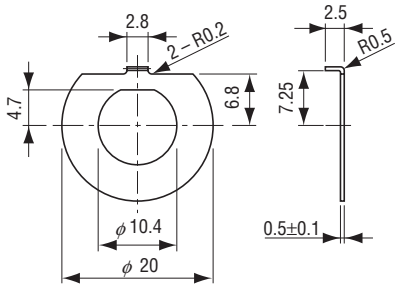
<Attachment>



※ Water resistant washer will be provided for panel seal type.
Position stopper (metal piece) is available.

<Option (Stopper)>

● RES20D / REC20D /RESW20D / RECW20D



The stopper can be provided upon request.

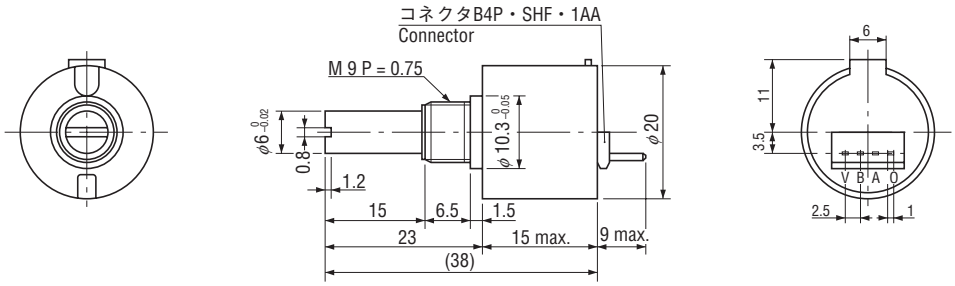
REC/RES
OPTICAL ENCODERS

■ OUTLINE DIMENSIONS

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

● RES20/RES20-Z

(Without click)

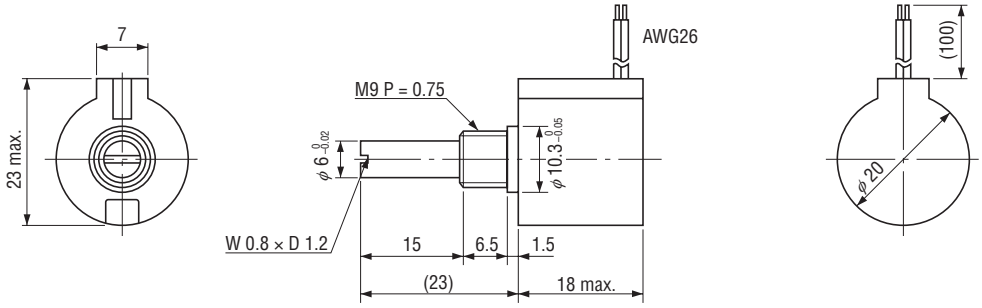


● REC20

(With click)

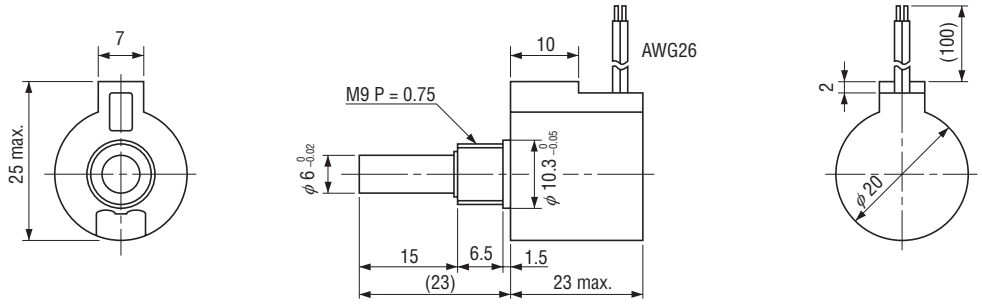
● RES20B

(Without click)

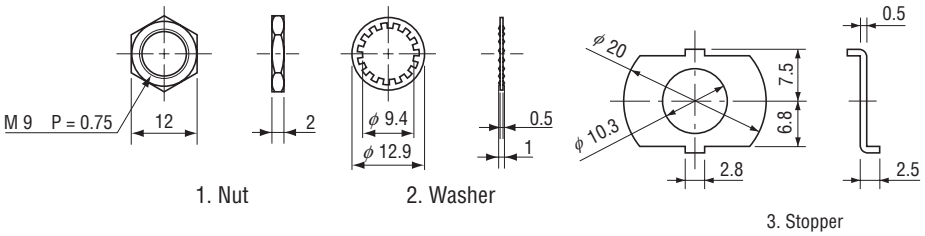


● REC20C

(With click)



<Accessories>

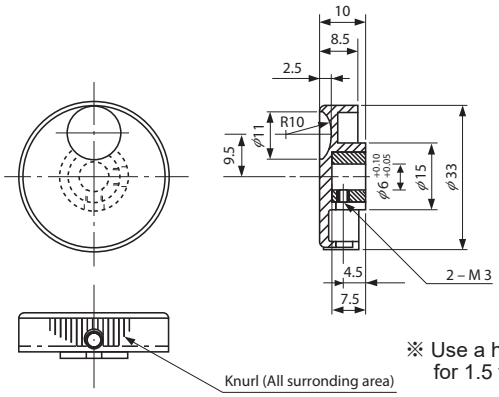


● KNOB FOR SETTING ENCODERS

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)



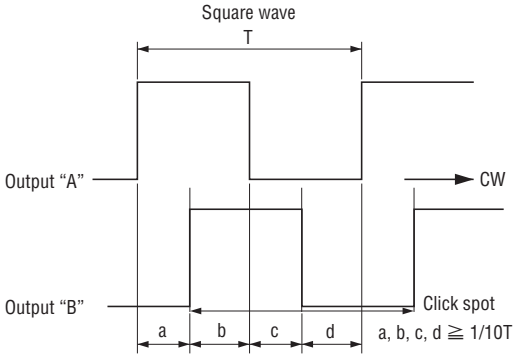
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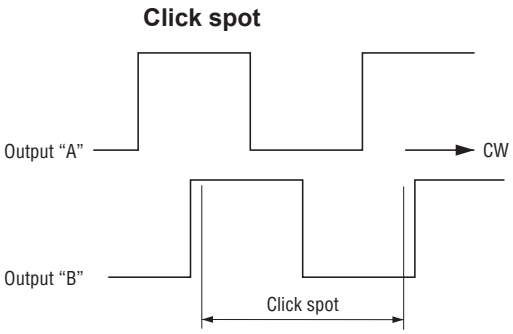


※ Use a hexagon wrench for 1.5 fastening.

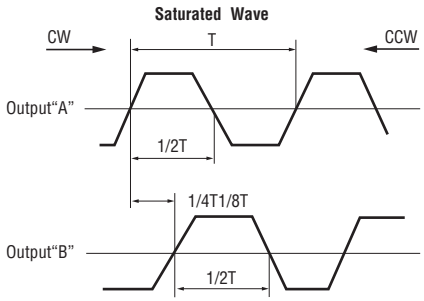
■ OUTPUT

● RES20D/REC20D/RESW20D/RECW20D

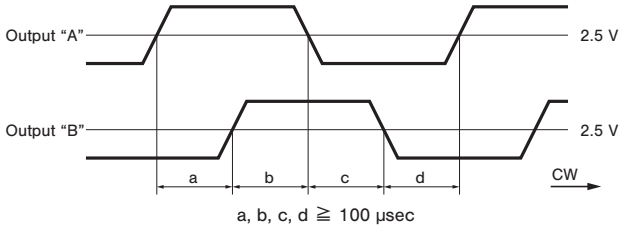




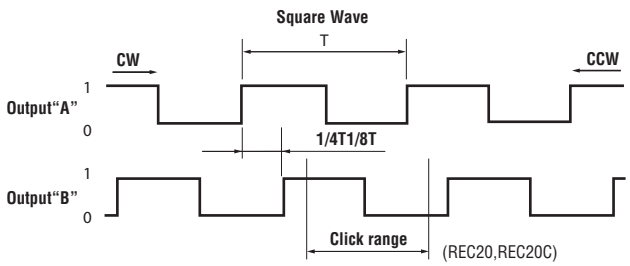
● RES20



● RES20 ∗ ∗ ∗ Z



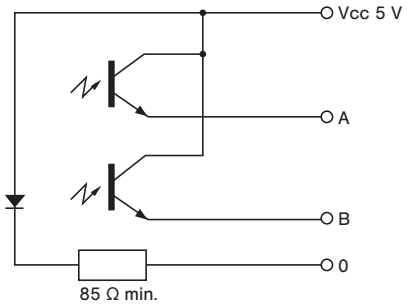
● REC20/RES20B/REC20C



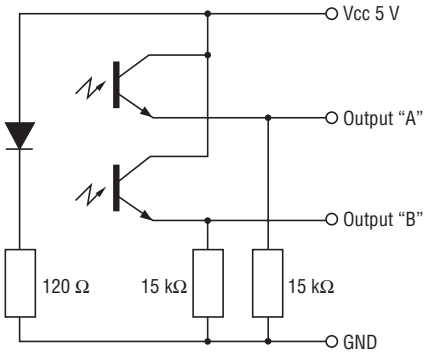
REC/RES
OPTICAL ENCODERS

OUTPUT CIRCUIT

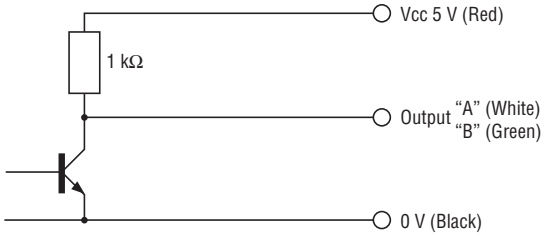
RES20



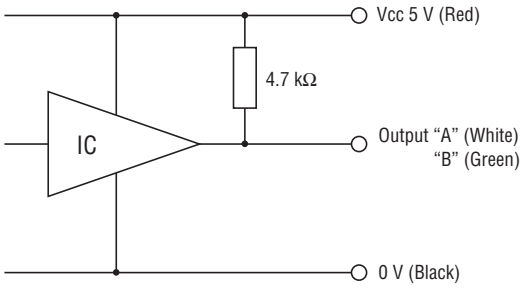
RES20-Z



REC20/RES20B/REC20C



RES20D/REC20D/RESW20D/RECW20D



EXTERNAL SCHEMATICS

RES20

