

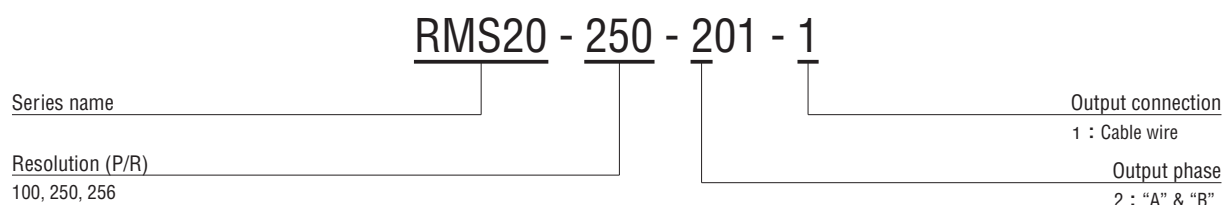
FEATURES

- High resolution of 256 P/R and fine setting
- Lower consumption of electric power (15 mA maximum) due to magnetic method
- Long life for 10⁵ times continuous run due to contactless & magnetic method
- Square wave output (with Amp.)
- Smooth rotation for setting
- RoHS compliant

RoHS compliant



PART NUMBER DESIGNATION



LIST OF PART NUMBERS

Resolution	Item	Input voltage	Part number
100 (P/R)	5 V		RMS20-100-201-1
250 (P/R)			RMS20-250-201-1
256 (P/R)			RMS20-256-201-1

※Verify the above part numbers when placing orders.

STANDARD SPECIFICATIONS

Electrical characteristics

Input voltage		DC5 V ± 5 %		
Input current		15 mA maximum (No load)		
Output wave form		Square wave		
Output phases		A, B		
(P/R) Resolution		100	250	256
Phase difference of outputs A & B		90° ± 45°		
Maximum frequency response		5 kHz		
Output signal	“1 (High)”	+ 4.5 V minimum		
	“0 (Low)”	+ 0.5 V maximum		
Sensor		Magnetoresistive element		

Mechanical characteristics

Rotational torque	4.90 mN·m {50 gf·cm} maximum	
Inertia	3 g·cm ² maximum	
Shaft loading (When mounting)	Radial	9.81 N {1 kgf} maximum
	Axial	9.81 N {1 kgf} maximum
Rotational life	10 ⁵ revolution	
Net weight	Approx. 20 g	
Strength of tighten screw	0.49 N·m {5 kgf·cm} maximum	

Environmental characteristics

Operating temp. range	- 10 ~ 60 °C
Storage temp. range	- 40 ~ 70 °C
Protection grade	IP40

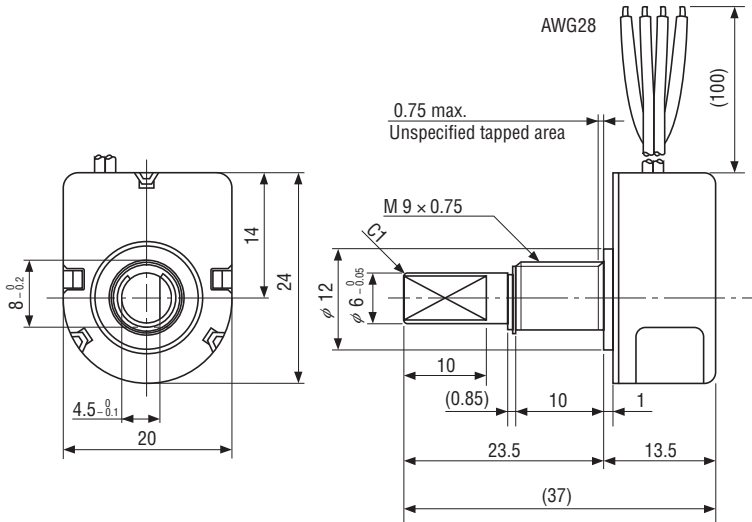
RELIABILITY TEST

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

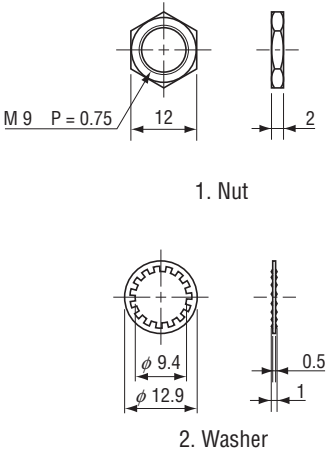
Test item		Test conditions	
Vibration	Power OFF	Amplitude : 1.52 mm or 98.1 m/s ² (10 G) whichever is smaller. 10 ~ 500 Hz excursion 15 min/cycle, 8 cycles each for X, Y, Z, directions.	
Shock	Power OFF	3 times each in directions (X, Z) at 490 m/s ² (50 G), 11 ms.	
High temperature exposure	Power OFF	70 °C 96 h	(To be measured after leaving samples for 1 h at normal temperature and humidity after the test.)
	Power ON	60 °C 96 h	
Low temperature exposure	Power OFF	− 40 °C 96 h	
Humidity	Power OFF	40 °C Relative humidity 90 ~ 95 % 96 h (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.) 70 °C 0.5 h、 − 40 °C 0.5 h	

OUTLINE DIMENSIONS

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



<Accessories>



Timing diagram for a 2-bit Gray code counter. The diagram shows two outputs, "A" and "B", over four clock periods labeled a, b, c, and d. The total period is T. The clock direction is indicated by "CW" (clockwise) and "CCW" (counterclockwise) arrows. The timing parameters are defined as $a, b, c, d = T/4 \pm T/8$ and $\Delta T = \pm T/8$.

Red	Power \oplus
Brown	Output "B"
White	Output "A"
Black	Power 0 (V)

The diagram shows an integrated circuit (IC) with its non-inverting input connected to a 5V supply (Vcc 5V, Red) through a 10kΩ resistor. The inverting input is connected to ground (0V, Black). The output is labeled 'Output A (White)' and 'Output B (Brown)'.

Sink current 1 mA maximum (at 25 °C)