OPTICAL ENCODERS

RE12D

■ FEATURES

- ϕ12 mm, 2 phases square wave
- High resolution 100 to 300 P/R
- Low torque, low inertia
- Cost effective

RoHS compliant

■ PART NUMBER DESIGNATION

RE12D – 100 – 201 – 1

- Series name
- Resolution (P/R): 100, 200, 300
- Output phase: 2 : "A" & "B"
- Output phase "Z": 0 : Non
- Input voltage: 1 : 5 V
- Output connection: 1 : Cable wire

■ LIST OF PART NUMBERS

Resolution / Item	Part number
100 (P/R)	RE12D-100-201-1
200 (P/R)	RE12D-200-201-1
300 (P/R)	RE12D-300-201-1

❉ Verify the above part numbers when placing orders.

■ MECHANICAL CHARACTERISTICS

Starting torque		0.05 mN·m {0.5 gf·cm} maximum
Inertia		0.01 g·cm^2
Shaft loading (When mounting)	Radial	1.96 N {200 gf} maximum
	Axial	1.96 N {200 gf} maximum
Net weight		10 g

■ ELECTRICAL CHARACTERISTICS

Input voltage		DC5 V ± 5 %
Input current		50 mA maximum
Output wave form		Square ware
Output phases		A, B
Resolution (P/R)		100, 200, 300
Phase difference of A & B outputs		90° ± 45°
Maximum frequencies response		10 kHz
Output signal	"1 (High)"	+ 4.5 V minimum
	"0 (Low)"	+ 0.5 V maximum
Output impedance		1 kΩ
Light source		LED

■ ENVIRONMENTAL CHARACTERISTICS

Operating temp. range	0 ~ 50 °C
Storage temp. range	– 20 ~ 80 °C

Oct, 2005

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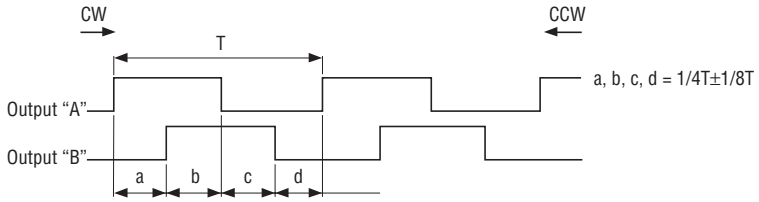
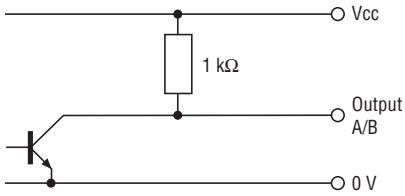
■ RELIABILITY TEST

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 5 min/cycle, 1 hour each for X, Y, Z, directions.	
Shock	Power OFF	1 time each in 6 directions (X, Y, 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	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 5 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, – 20 °C 0.5 h	

■ OUTPUT

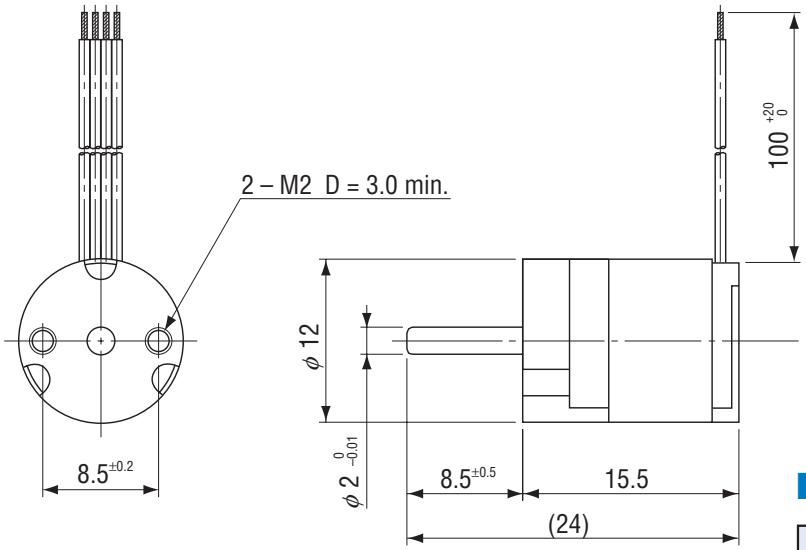


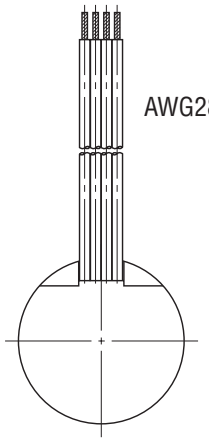
■ OUTPUT CIRCUIT



■ OUTLINE DIMENSIONS

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





■ ELECTRICAL WIRING

Red	Power ⊕
Black	Power 0 (V)
White	Output "A"
Green	Output "B"

■ Specifications are subject to change without notice. Specifications in this catalog are for reference. The formal specification sheets will be submitted upon request.