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OPTICAL ENCODERS

RE30E

FEATURES

- With temp. compensation circuit
- With zero index signal
- Power supply voltage is for 5 ~ 12 V, 24V
- Economy type
- RoHS compliant

RoHS compliant



PART NUMBER DESIGNATION

RE30E - 100 - 213 - 1

- Series name
- Resolution (P/R): 100, 200, 300, 360, 400, 500, 600, 800, 900, 1000, 1024
- Output phase: 2 : "A" & "B"
- Input voltage: 3 : 5 ~ 12 V; 4 : 5 ~ 12 V Open collector; 8 : 24 V; A : 24 V Open collector
- Output phase "Z": 1 : Provided
- Output connection: 1 : Cable wire

LIST OF PART NUMBERS

Item / Resolution	Input voltage			
	5 ~ 12 V	5 ~ 12 V Open collector	24 V	24 V Open collector
100 (P/R)	RE30E-100-213-1	RE30E-100-214-1	RE30E-100-218-1	RE30E-100-21A-1
200 (P/R)	RE30E-200-213-1	RE30E-200-214-1	RE30E-200-218-1	RE30E-200-21A-1
300 (P/R)	RE30E-300-213-1	RE30E-300-214-1	RE30E-300-218-1	RE30E-300-21A-1
360 (P/R)	RE30E-360-213-1	RE30E-360-214-1	RE30E-360-218-1	RE30E-360-21A-1
400 (P/R)	RE30E-400-213-1	RE30E-400-214-1	RE30E-400-218-1	RE30E-400-21A-1
500 (P/R)	RE30E-500-213-1	RE30E-500-214-1	RE30E-500-218-1	RE30E-500-21A-1
600 (P/R)	RE30E-600-213-1	RE30E-600-214-1	RE30E-600-218-1	RE30E-600-21A-1
800 (P/R)	RE30E-800-213-1	RE30E-800-214-1	RE30E-800-218-1	RE30E-800-21A-1
900 (P/R)	RE30E-900-213-1	RE30E-900-214-1	RE30E-900-218-1	RE30E-900-21A-1
1000 (P/R)	RE30E-1000-213-1	RE30E-1000-214-1	RE30E-1000-218-1	RE30E-1000-21A-1
1024 (P/R)	RE30E-1024-213-1	RE30E-1024-214-1	RE30E-1024-218-1	RE30E-1024-21A-1

※ Verify the above part numbers when placing orders.

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

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OPTICAL ENCODERS

■ STANDARD SPECIFICATIONS

● Electrical characteristics

Input voltage		DC5 ~ 12 V ± 10 %	DC24 V ± 10 %
Input current		50 mA maximum	
Output wave form		Square wave	
Output phases		A, B, Z	
(P/R) Resolution		100, 200, 300, 360, 400, 500 600, 800, 900, 1000, 1024	
Phase difference of outputs A & B		90° ± 45°	
Maximum frequencys response		10 kHz (100 P/R), 20 kHz (200P/R) 25 kHz (300 ~ 500 P/R), 60 kHz (600 P/R) 80 kHz (800 P/R), 90 kHz (900P/R) 100 kHz (1000 ~ 1024 P/R)	
Output signal	"1 (High)"	(Vcc – 1) V min.	(Vcc – 2) V min.
	"0 (Low)"	+ 0.5 V max.	+ 1.0 V max.
Output impedance		2.2 kΩ	
Light source		LED	

● Mechanical characteristics

Starting torque		0.29 mN·m {3 gf·cm} maximum
Inertia		2 g·cm^2 maximum
Shaft loading (When mounting)	Radial	19.6 N {2 kgf} maximum
	Axial	9.81 N {1 kgf} maximum
Net weight		Approx. 70 g

● Environmental characteristics

Operating temp. range	0 ~ 70 °C
Storage temp. range	– 20 ~ 80 °C
Protection grade	IP40

■ RELIABILITY TEST

The output wave form shall satisfy the STANDARD SPECIFICATIONS after the following tests.

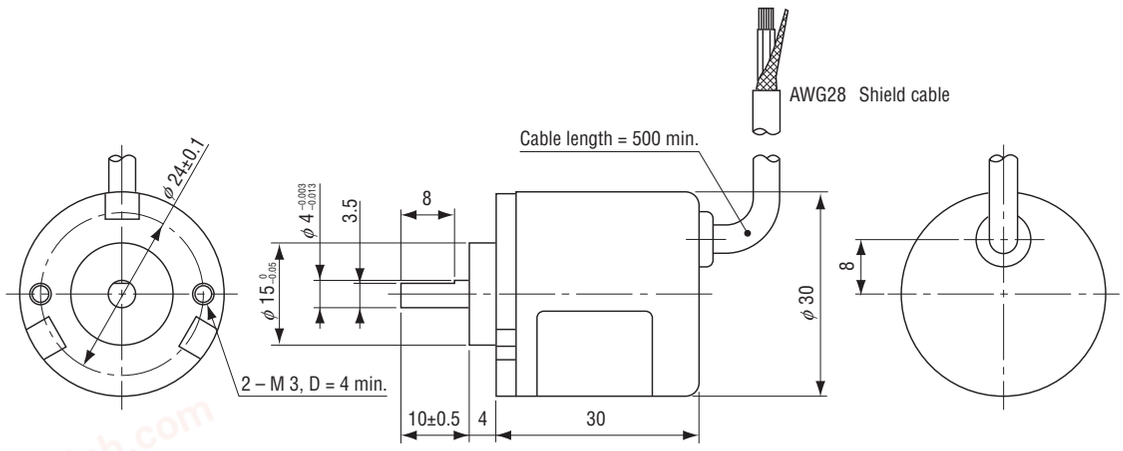
Test item		Test conditions	
Vibration	Power OFF	Amplitude : 1.52 mm or 98.1 m/s^2 (10 G) whichever is smaller. 10 ~ 500 Hz excursion 0.25 h/cycle, 8 cycles each for X, Y, Z, directions.	
Shock	Power OFF	3 times each in 6 directions (X, Y, Z) at 490 m/s^2 (50 G), 11 ms.	
High temperature exposure	Power OFF	80 °C 96 h	(To be measured after leaving samples for 1 h at normal temperature and humidity after the test.)
	Power ON	70 °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 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 1 h、– 20 °C 1 h	

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OUTLINE DIMENSIONS

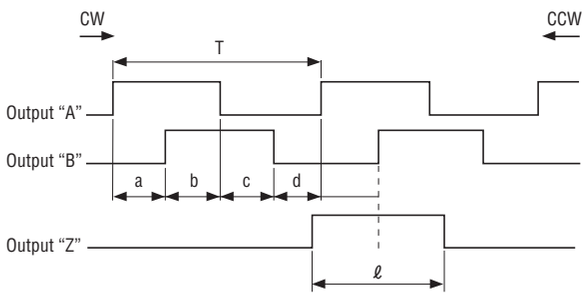
Unless otherwise specified, tolerance: ± 0.4 (Unit: mm)



ELECTRICAL WIRING

Red	Power ⊕
Black	Power 0 (V)
White	Output “A”
Green	Output “B”
Yellow	Output “Z”
Cable shield	NC

OUTPUT

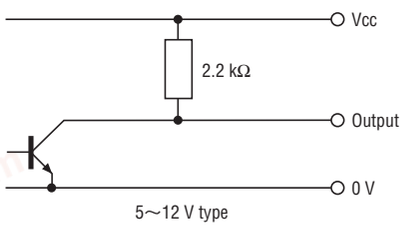


a, b, c, d = 1/4±T1/8T
ℓ = T±3/4T

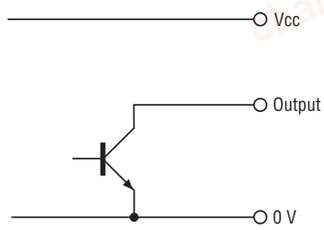
The “Z” phase, however, includes no more than two “B” phase startups (CW rotation)

OUTPUT CIRCUIT

● RE30E



5~12 V type



5~12 V open collector type

Sink current of output circuit 80 mA maximum (at 25 ℃)