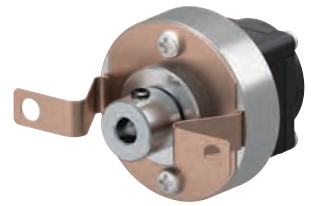


## Rotary Encoder

- Outer diameter  $\phi 30$  mm
- High resolution (1000 P/R or 2000 P/R) Incremental Type
- Voltage output, line driver output



Round Shaft Type



Hollow Shaft Type

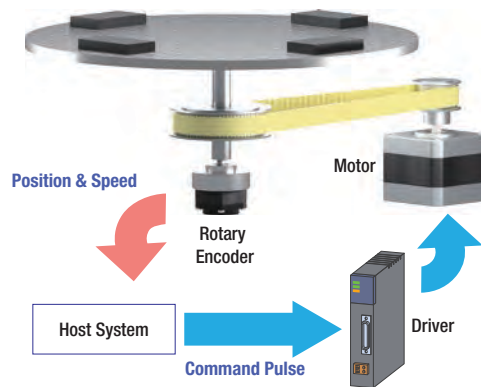
### Small, Thin, and Lightweight High-Resolution Incremental Encoder

Because these are small, thin and lightweight, with an outer diameter of  $\phi 30$  mm, depth of 22 mm, and mass of 33 g (round shaft type) / 38 g (hollow shaft type), they can be installed in tight spaces.

It is also a high resolution (1000 P/R or 2000 P/R) incremental type.

### Actual Position, Speed and Rotation Direction of the Mechanism can be Detected

By installing a rotary encoder on a mechanism, a preventative maintenance system for that mechanism can be created.

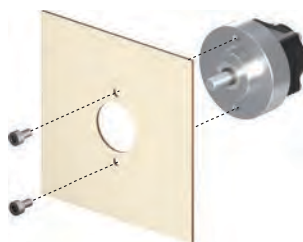


● Application Example

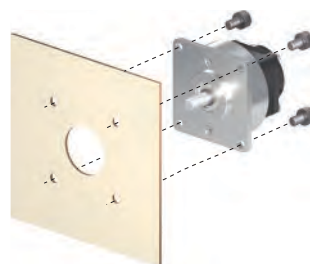
In a belt-and-pulley mechanism, it is possible to detect the difference in rotation between the motor and mechanism due to belt deflection or breakage.

### Can Be Installed to Suit the Mechanism

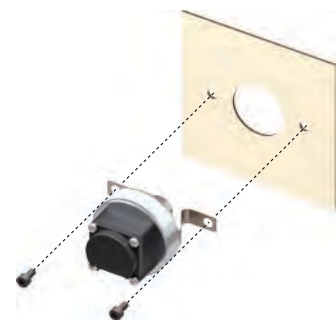
Round Shaft Type



Round Shaft Type + Mounting Bracket (Sold separately)

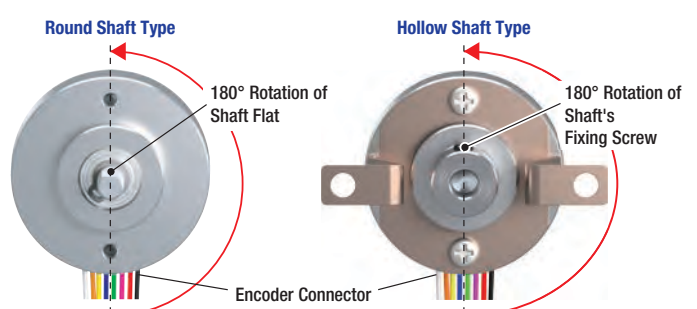


Hollow Shaft Type



### Aligning Mechanical Home and Z-Phase Signal Position is Easy

The Z-phase signal is output at the position where the shaft flat (round shaft type) or the fixing screw (hollow shaft type) has rotated 180° from the encoder connector. Use this as a guide when aligning the mechanical home and the Z-phase signal position.



## Product Number

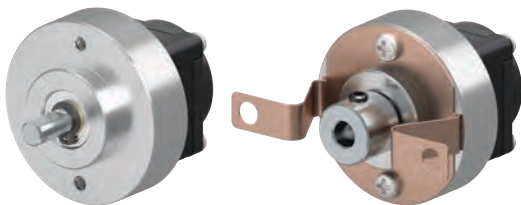
● Rotary Encoder

# RE2 A R3J L

①      ②      ③

①	Output Shaft Type	<b>A:</b> Round Shaft <b>H:</b> Hollow Shaft
②	Resolution	<b>R3J:</b> 1000 P/R <b>R3M:</b> 2000 P/R
③	Output Circuit Type	<b>L:</b> Line Driver Output Blank: Voltage Output

## Product Line



Round Shaft Type

Hollow Shaft Type

Output Shaft Type	Resolution [P/R]	Output Circuit Type	Product Name
Round Shaft Type	1000	Line Driver	<b>RE2AR3JL</b>
		Voltage	<b>RE2AR3J</b>
	2000	Line Driver	<b>RE2AR3ML</b>
		Voltage	<b>RE2AR3M</b>
Hollow Shaft Type	1000	Line Driver	<b>RE2HR3JL</b>
		Voltage	<b>RE2HR3J</b>
	2000	Line Driver	<b>RE2HR3ML</b>
		Voltage	<b>RE2HR3M</b>

● Connection cables must be ordered individually.

## Included Items

Operating Manual

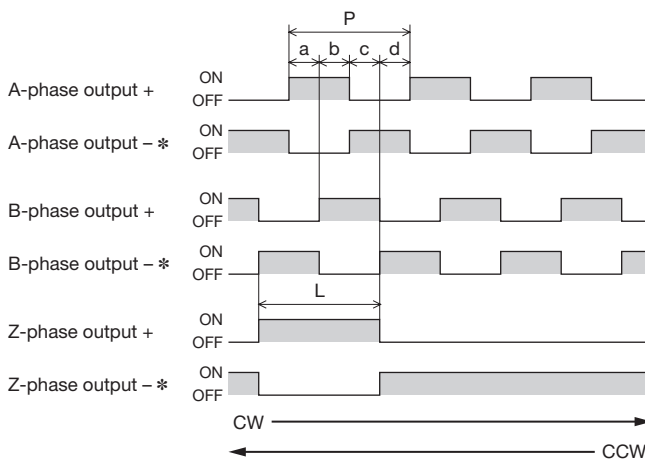
## Specifications

### Electrical Specifications

Output Type	Incremental	
Output Circuit	Line Driver Output*	Voltage Output
Resolution (p/r)	1000, 2000	
Output Signals	A phase, B phase, Z phase: 3 channel	
Output Circuit		
Max. Draw Current	20 mA	
Output Voltage	H Level	2.5 VDC min. / 4.3 VDC min. (no load)
	L Level	0.5 VDC max.
Response Frequency	200 kHz max.	100 kHz max.
Power Supply Voltage	5 VDC ± 10%	
Current Consumption (No load)	30 mA max.	45 mA max.
Angular Accuracy	±0.36°	

\*26C31 or Equivalent

### Output Waveform



\*Line driver output only

### Waveform Accuracy

- Duty ratio: 50% ± 12.5% for both A-phase output and B-phase output
- Z phase output:  $P/4 \leq L \leq 3P/4$
- Phase difference:  $a, b, c, d = P/4 \pm P/8$
- Signal rise and fall times: 1 μs max. (at connector terminal)

## General Specifications

Operating Environment	Ambient Temperature	-10 - +85°C (Non-Freezing)
	Humidity	85% or less (Non-Condensing)
	Altitude	Up to 1000 m above sea level
Storage Conditions Transportation Conditions	Atmosphere	No corrosive gases or dust. The product should not be exposed to water, oil or other liquids.
	Ambient Temperature	-20 - +85°C (Non-Freezing)
	Humidity	85% or less (Non-Condensing)
Degree of Protection	Altitude	Up to 3000 m above sea level
	Atmosphere	No corrosive gases or dust. The product should not be exposed to water or oil.
Degree of Protection	IP20	
Insulation Resistance	100 MΩ or more when a 500 VDC megger is applied between the power supply terminal and the frame.	
Dielectric Strength	Sufficient to withstand 0.5 kVAC 50/60 Hz applied between the power supply terminal and the frame for 1 minute.	
Vibration	10 - 55 Hz Full amplitude 1.5 mm X, Y, Z; 2 hours for each direction	
Shock	490 m/s <sup>2</sup> 11 ms X, Y, Z directions; 3 times each	

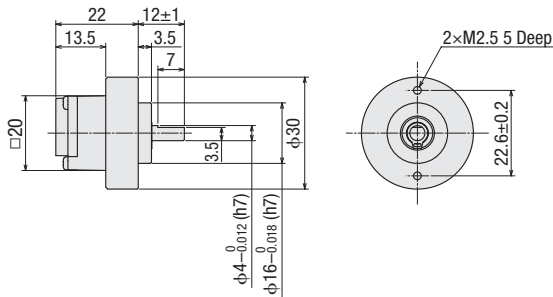
## Mechanical Specifications

Inertia	1.0×10 <sup>-7</sup> kgm <sup>2</sup> (Round Shaft Type) 1.6×10 <sup>-7</sup> kgm <sup>2</sup> (Hollow Shaft Type)
Permissible Radial Load	10 N (Shaft End)
Permissible Axial Load	5 N
Max. Speed	6000 r/min (Max. Response Frequency)
Mass	33 g (Round Shaft Type) 38 g (Hollow Shaft Type)

## Dimensions (Unit: mm)

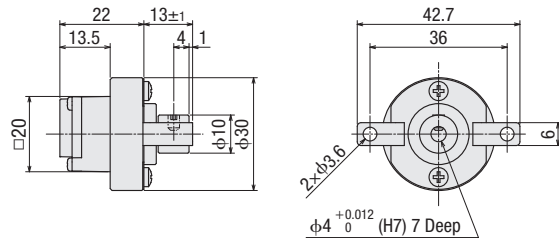
### Round Shaft Type

Mass 33 g



### Hollow Shaft Type

Mass 38 g



# Encoder Connection Cable

## ① Lead Wire

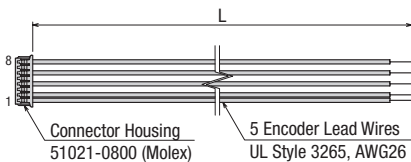


### Product Line

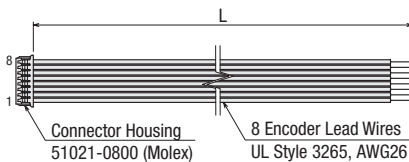
Applicable Encoder Type	Product Name	Length L [m]	Conductor AWG
Voltage Output	<b>LCE05A-006</b>	0.6	26 (0.13 mm <sup>2</sup> )
Line Driver Output	<b>LCE08A-006</b>		

### Dimensions (mm)

#### For Voltage Output



#### For Line Driver Output



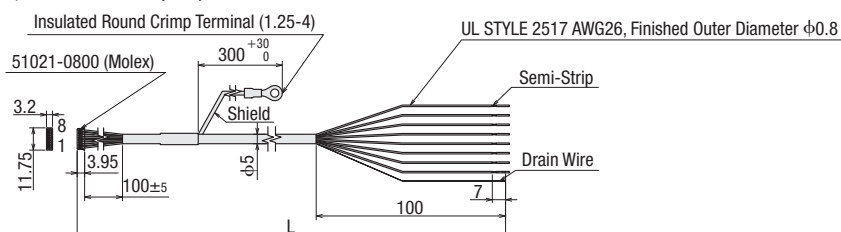
## ② Flexible Shielded Cable



### Product Line

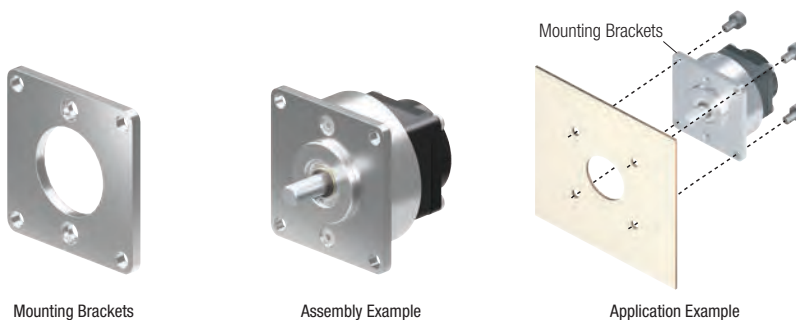
Applicable Encoder Type	Product Name	Length L [m]	Conductor AWG
Voltage Output/ Line Driver Output	<b>CC010E1R</b>	1	26 (0.13 mm <sup>2</sup> )
	<b>CC020E1R</b>	2	
	<b>CC030E1R</b>	3	

### Dimensions (mm)



# Mounting Bracket (Round Shaft Type)

The round shaft type rotary encoder can be installed by using the mounting bracket.



## Product Line

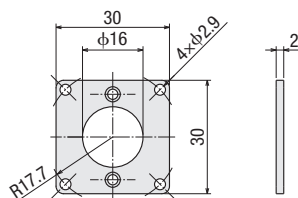
Product Name  
**PEF2**

## Included Items

Installation Screws M2.5 x 2

## Dimensions (mm)

Material: Aluminum Alloy Surface Treatment: Anodized Aluminum



# Orientalmotor

These products are manufactured at plants certified with the international standards ISO 9001 (for quality assurance) and ISO 14001 (for systems of environmental management).

Specifications are subject to change without notice. This catalogue was published in April 2024.

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