



# Reversible Motors

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# Reversible Motors



World **K** Series  
(Lead Wire Type)



**V** Series  
(Terminal Box Type)

\* Gearheads shown in the photograph are sold separately. The **V** Series is combination type. (Pre-assembled Gearmotor)

## Features

### Optimal for Bi-Directional Operation

These are 30-minute rated motors designed for applications where instantaneous reversal of direction is frequently required.

\* 30-minute rating: The motors may be operated continuously for 30 minutes, but depending on operating conditions (intermittent operation, etc.), they can be operated for more than 30 minutes.

### Wide Variety of Products

World **K** Series, **K** Series and **V** Series motors are available. For connection with the power supply, you can select from lead wire and terminal box types.

### Conform to Safety Standards and Conforms to Global Power Supply Voltages

Conforms to UL/CSA/EN standards and the CE Marking is being used in accordance with the low voltage directive. Also, our wide range of products includes those that meet the power supply voltages of North America, Asia and major countries in Europe.

\* Some of models are not certified by EN standards.

### Combination Type (Pre-assembled Gearmotors) (V Series)

The combination type (pre-assembled gearmotors) come with the motor and its dedicated gearhead already assembled. This simplifies installation in equipment. Motors and gearheads are also available separately so they can be on hand to make changes or repairs.

## Safety Standards and CE Marking

### World K Series, V Series

Standards	Certification Body	Standards File No.	CE Marking
UL1004 UL2111	UL	E64199 (6 W) E64197 (15 W~90 W)	Low Voltage Directives
CSA C22.2 No.100 CSA C22.2 No.77			
EN60950	VDE	114919 (6 W) 6751 (15 W~90 W)*2	
EN60034-1 EN60034-5 IEC60034-11*1	Conform to EN/IEC Standards		

\*1 15 W~90 W types.

\*2 Except **V** Series 90 W.

● When the motor is approved under various standards, the model name on the nameplate is the approved model name.

● [Details of Safety Standards](#) → Page G-2

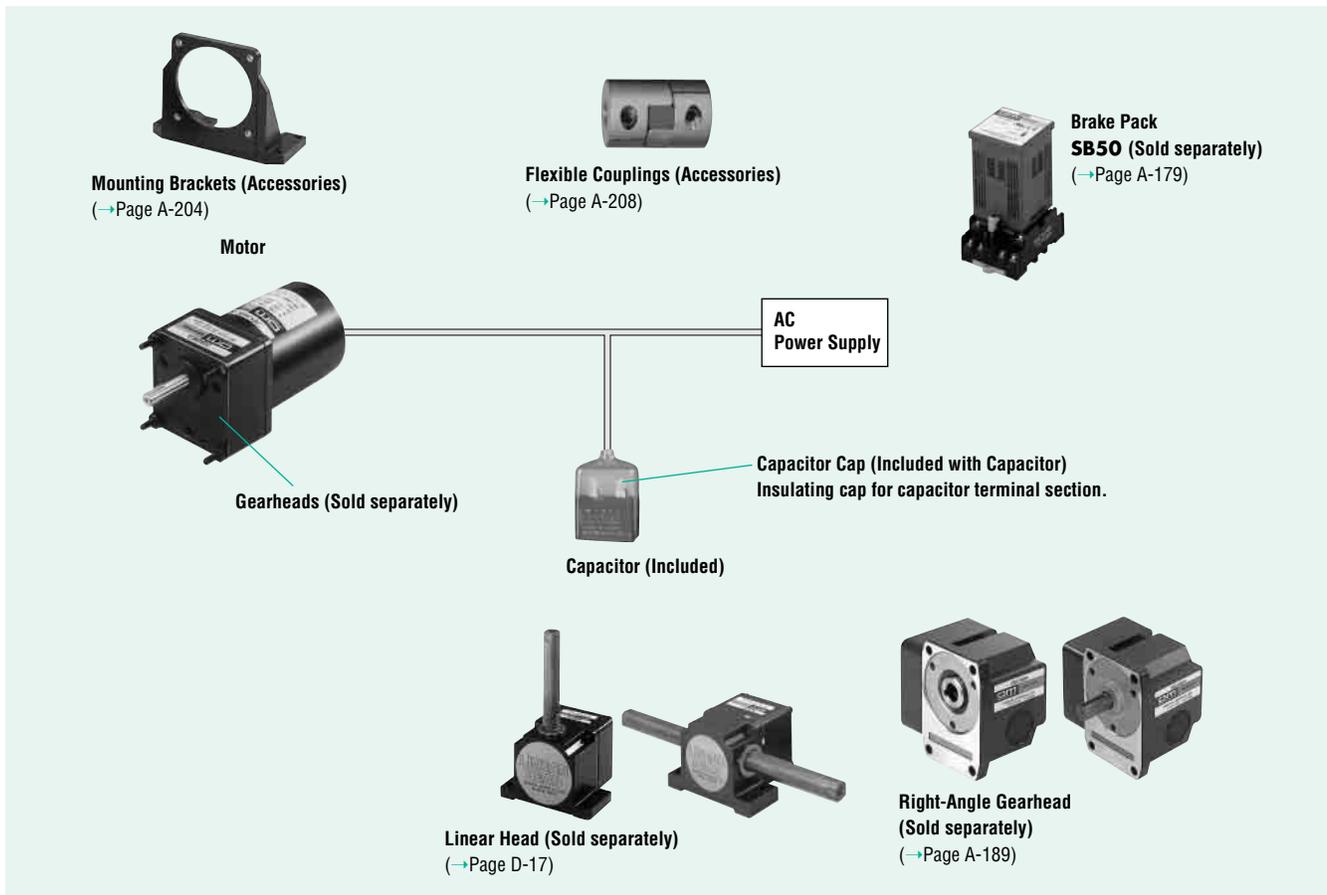
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### K Series (1 W only)

Standards	Certification Body	Standards File No.	CE Marking
UL1004 UL519	UL	E64199	Low Voltage Directives
CSA C22.2 No.100 CSA C22.2 No.77	CSA	LR47296	
EN60950	VDE	5876ÜG	

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## System Configuration



The System configuration shown is an example. Other configurations are available.

## Product Number Code

### World K Series

# 4 R K 25 GN - AW T U

#### Included Capacitor

**U:** For Single-Phase 110/115 VAC  
**E:** For Single-Phase 220/230 VAC

**T:** Terminal Box Type

#### Voltage

**AW:** Single-Phase 100/110/115 VAC, 4 Poles  
**CW:** Single-Phase 200/220/230 VAC, 4 Poles

#### Motor Shaft Type

**GN:** Pinion Shaft (for use with **GN** type gearhead)  
**GU:** Pinion Shaft (for use with **GU** type gearhead)  
**A:** Round Shaft

#### Output Power

(Example) **25:** 25 W

Motor Series **K:** K Series

Motor Type **R:** Reversible Motor

Motor Frame Size **2:** 2.36 in. sq. (60 mm sq.) **4:** 3.15 in. sq. (80 mm sq.)  
**3:** 2.76 in. sq. (70 mm sq.) **5:** 3.54 in. sq. (90 mm sq.)

#### Note:

- The "U" and "E" at the end of the model name indicate that the unit includes a capacitor. These two letters are not listed on the motor nameplate.

### V Series

# V H R 5 40 A T - 300 U

#### Included Capacitor

**U:** For Single-Phase 110/115 VAC  
**E:** For Single-Phase 220/230 VAC

#### Gear Ratio

(Example) **300:** Gear Ratio of 300:1

**T:** Terminal Box Type

#### Voltage

**A:** Single-Phase 100/110/115 VAC  
**C:** Single-Phase 200/220/230 VAC

#### Output Power

(Example) **40:** 40 W

Motor Frame Size **2:** 2.36 in. sq. (60 mm sq.)  
**3:** 2.76 in. sq. (70 mm sq.)  
**4:** 3.15 in. sq. (80 mm sq.)  
**5:** 3.54 in. sq. (90 mm sq.)

#### Motor Type

**R:** Reversible Motor

#### Note:

- The "U" and "E" at the end of the model name indicate that the unit includes a capacitor. These two letters are not listed on the motor nameplate.

### World K Series and K Series Gearhead

# 4 GN 50 KA

#### Type of Bearings or Shaft Type

**KA:** Ball Bearing Type (inch size)  
**RAA:** Right Angle Solid Shaft Type (inch size)  
**RH:** Right Angle Hollow Shaft Type

#### Gear Ratio

(Example) **50:** Gear Ratio of 50:1

**10X** denotes the decimal gearhead of gear ratio 10:1

#### Gearhead Type

**GN:** GN Type (for use with **GN** type pinion shaft motor)  
**GU:** GU Type (for use with **GU** type pinion shaft motor)

#### Gearhead Frame Size

**0:** 1.65 in. sq. (42 mm sq.)  
**2:** 2.36 in. sq. (60 mm sq.)  
**3:** 2.76 in. sq. (70 mm sq.)  
**4:** 3.15 in. sq. (80 mm sq.)  
**5:** 3.54 in. sq. (90 mm sq.)

### K Series

# 0 R K 1 GN - A UL

**UL:** UL Recognized and  
CSA, VDE certified

#### Voltage

**A:** Single-Phase 115 VAC, 4 Poles

#### Motor Shaft Type

**GN:** Pinion Shaft (for use with **GN** type gearhead)  
**A:** Round Shaft

#### Output Power

1 W

Motor Series **K:** K Series

Motor Type **R:** Reversible Motor

#### Motor Frame Size

**0:** 1.65 in. sq. (42 mm sq.)

## General Specifications

### World K Series, V Series

Item	Specifications
Insulation Resistance	100 MΩ or more when 500 VDC is applied between the windings and the frame after rated motor operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 kV at 50 Hz and 60 Hz applied between the windings and the frame for 1 minute after rated motor operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings are 144°F (80°C) or less measured by the resistance change method after rated motor operation with a connected a gearhead or equivalent heat radiation plate.*
Insulation Class	Class B (266°F [130°C])
Overheat Protection	6 W type has impedance protection. All others have a built-in thermal protector (Automatic return type) Operating temperature, open: 266°F±9°F (130°C±5°C) close: 179.6°F±27°F (82°C±15°C)
Ambient Temperature Range	14°F~104°F (-10°C~+40°C) (nonfreezing)
Ambient Humidity	85% maximum (noncondensing)
Degree of Protection	Lead wire type (World <b>K</b> Series, <b>V</b> Series): IP 20 Terminal box type (World <b>K</b> Series, <b>V</b> Series): IP 40

#### \*Heat radiation plate (material: Aluminum)

Model (output)	Size: in. (mm)	Thickness: in. (mm)
<b>2RK</b> Type (6 W)	4.53×4.53 (115×115)	0.20 (5)
<b>3RK</b> Type (15 W)	4.92×4.92 (125×125)	
<b>4RK</b> Type (25 W)	5.31×5.31 (135×135)	
<b>5RK40</b> Type (40 W)	6.50×6.50 (165×165)	
<b>5RK60</b> Type (60 W)	7.87×7.87 (200×200)	
<b>5RK90</b> Type (90 W)	7.87×7.87 (200×200)	

### World K Series (1W only)

Item	Specifications
Insulation Resistance	100 MΩ or more when 500 VDC is applied between the windings and frame after the rated motor operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 kV at 60 Hz applied between the windings and the frame after rated motor operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings are 135°F (75°C) or less measured by the resistance change method after rated motor operation.
Insulation Class	UL, CSA Standard Class A [221°F (105°C)] EN Standard Class E [248°F (120°C)]
Overheat Protection	Impedance protected
Ambient Temperature Range	14°F~104°F (-10°C~+40°C) (nonfreezing)
Ambient Humidity	85% maximum (noncondensing)
Degree of Protection	IP20