

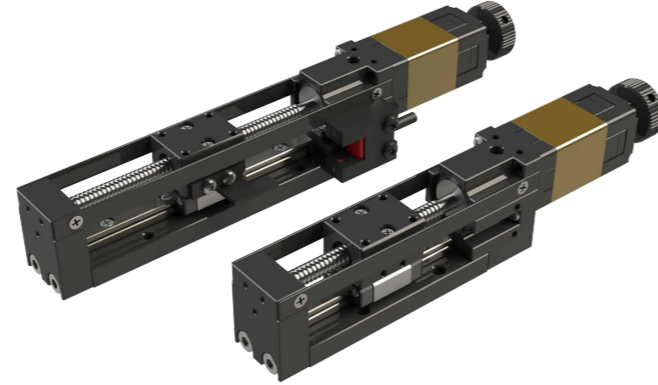
# Compact Actuator NEMA 6 size

## CAS Series

The most compact single axis Actuator in KSS with NEMA 6 size of 2 phase stepping Motor.

### Features

Realized compactness not only the body width, but total length of the Actuator by combining NEMA 6 Stepping Motor using our unique coupling - less connection.



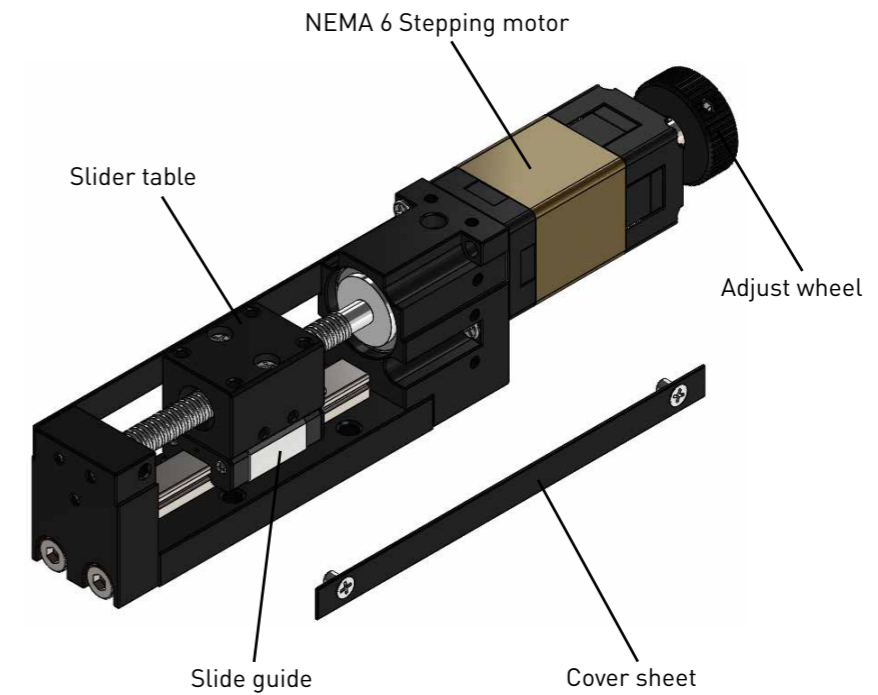
### Specifications

	Lead 1mm	Lead 2mm
Travel (mm)	20, 40	
Drive Screw	Rolled Ball Screw	
Resolution (mm)	0.005	0.01
Repeatability (mm)	Max. $\pm 0.010$	
Lost motion (mm)	Max. 0.010	
Horizontal Load Capacity (N)	Max. 10	Max. 5
Vertical Load Capacity (N)	Max. 5	Max. 3
Permissible speed (mm/sec)	Max. 20	Max. 40
Maximum acceleration (m/sec <sup>2</sup> )	0.1	0.2
Permissible Moment Mp (Nm) (Pitching)	0.14	
Permissible Moment My (Nm) (Yawing)	0.12	
Permissible Moment Mr (Nm) (Rolling)	0.22	

Note) Refer to page Q130 for connection diagram of recommended Drivers.

Recommended Drivers      SD4015B3

### Structure



### Model number notation

**CAS 14 - R 010 - 020 H R S**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① Series No.  
CA : KSS Compact Actuator Series
- ② Motor Frame Size  
14 : NEMA 6
- ③ Drive Screw type  
R : Rolled Ball Screw
- ④ Lead / Pitch (mm) : 010 means 1mm
- ⑤ Travel (mm) 020 means 20mm
- ⑥ Connector type  
N : No connector (Bare)  
H : HIROSE RP17  
E : EI connector (TE Connectivity)  
S : Others
- ⑦ Direction of Motor leads  
R : Right (from shaft end side)  
L : Left  
T : Top  
B : Bottom
- ⑧ Option  
S : Sensor outside

Standard style of CAS series

Rollled Ball Screw + 2-phase Stepping Motor

# CAS □ 14 / CAS NEMA 6

Shaft dia.  $\phi 4$

Motor Model : SH2141-5511 (Double Shaft)

Sanyo Denki

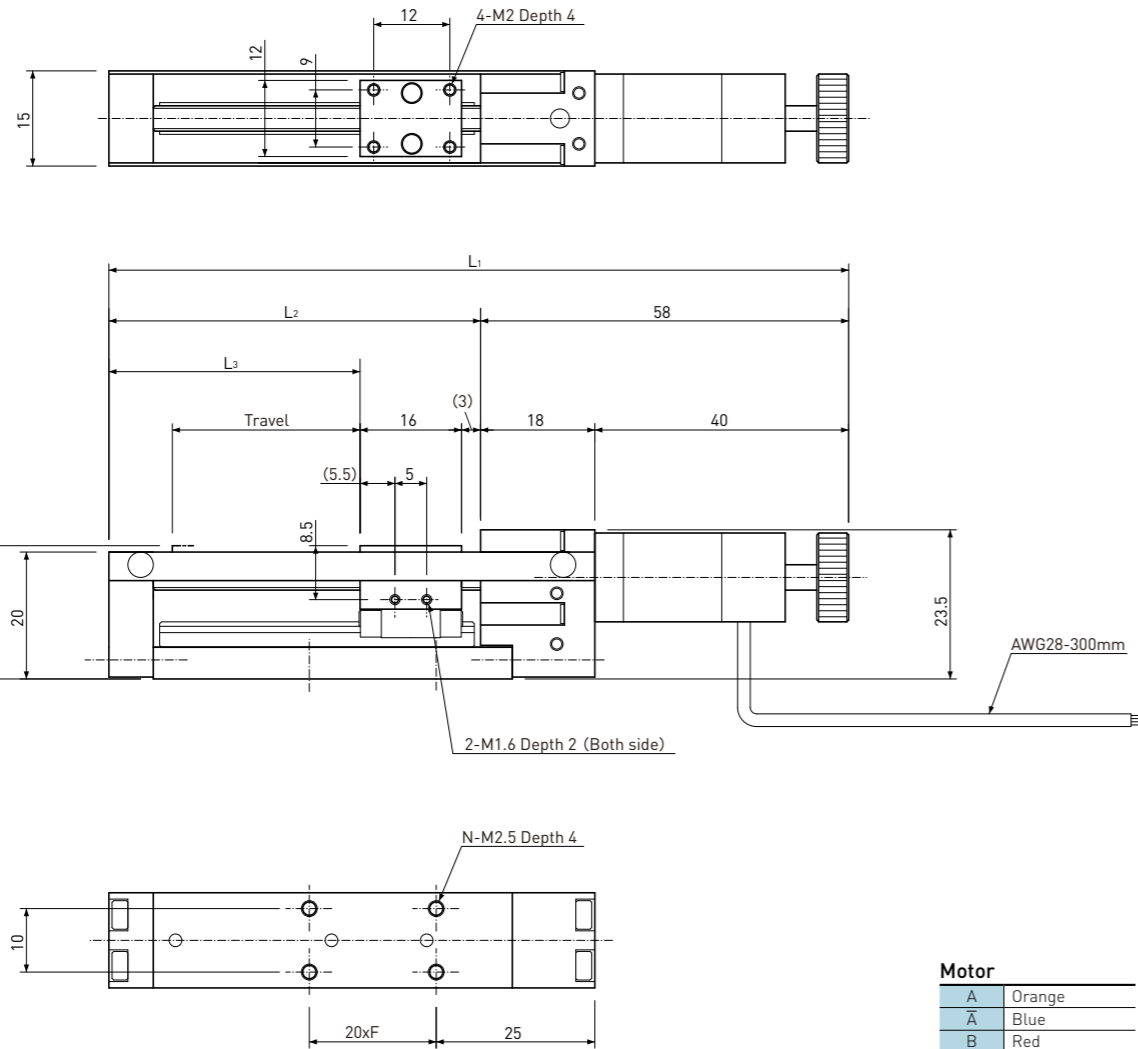
Driver recommendation : SD4015B3

**Connector choice**

Please designate connector type below.

No connector if there is no designation.

- 1) None (Bare)
  - 2) RP17-13J-12SC (HIROSE)
  - 3) EI-Connector (TE connectivity)
- 172211-6 pins for Motor + 172211-4 pins for Sensor



Motor	
A	Orange
$\bar{A}$	Blue
B	Red
$\bar{B}$	Yellow

**HIROSE RP17 Connector**

Upper side (white dot)

1	None
2	None
3	Stepping Motor A (Orange)
4	Stepping Motor $\bar{A}$ (Blue)
5	Stepping Motor B (Red)
6	Stepping Motor $\bar{B}$ (Yellow)
7	None
8	None
9	None
10	None
11	None
12	None

RP17-13J-12SC (female)

**EI Connector**

1	None
2	None
3	Stepping Motor A (Orange)
4	Stepping Motor $\bar{A}$ (Blue)
5	Stepping Motor B (Red)
6	Stepping Motor $\bar{B}$ (Yellow)

172211-6 (male)

**When Sensor option is selected**

Upper side (white dot)

1	None
2	None
3	Stepping Motor A (Orange)
4	Stepping Motor $\bar{A}$ (Blue)
5	Stepping Motor B (Red)
6	Stepping Motor $\bar{B}$ (Yellow)
7	+5~24V (Blown)
8	COM (Blue)
9	Short circuit with No.8
10	ORGLS Sensor NC (Black)
11	None
12	None

RP17-13J-12SC (female)

**When Sensor option is selected**

1	+5~24V (Blown)
2	COM (Blue)
3	Short circuit with No.2
4	ORGLS Sensor NC (Black)

172211-4 (male)

**Note**

- 1) There should be no condensation when using.
- 2) Permissible Moment is the number when no load in other direction.
- 3) Resolution represents the values for full step.
- 4) Model number is for no-connector and lead wire is set on right side on Motor.
- 5) Vibration may increase at low speed or zero return.

Model Number	Travel (mm)	Screw Lead (mm)	Resolution ( $\mu m$ )	Length (mm)			Resolution		Max. Load Capacity (N)		Permissible speed (mm / sec)	Mass (g)
				L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	F	N	Hor.	Vert.		
CAS14 - R010 - 020	20	1	0.005	107	49	30	1	4	10	5	20	88
CAS14 - R010 - 040	40	1	0.005	127	69	50	2	6	10	5	20	96
CAS14 - R020 - 020	20	2	0.01	107	49	30	1	4	5	3	40	88
CAS14 - R020 - 040	40	2	0.01	127	69	50	2	6	5	3	40	96

Permissible Moment	
Pitching Mp	0.14Nm
Yawing My	0.12Nm
Rolling Mr	0.22Nm

Lubrication	Grease MSG No.2 (KSS)
Operating Temp.	0~40°C

Common Specifications	
Repeatability	Max. $\pm 0.01mm$
Lost Motion	Max. 0.01mm
Body Material	Aluminum
Sliding guide	Slide Guide rail

Motor Specifications	
Driving method	2-phase Bi-polar
Rated Voltage	6.3V (DC)
Rated current	0.3A/phase (※)
Winding resistance	21 $\Omega$
Insulation Class	Class B (130°C)

※SD4015B3 (Vanguard Systems Co., Ltd.) is recommended for driver.  
Please use Run current 0.4A setting.

Please refer to Technical Description page S106 for the Datum clamp face of the Actuator.

## Connection diagrams

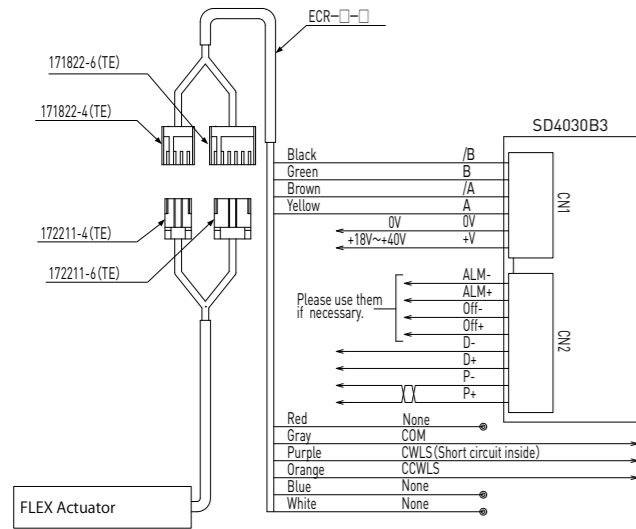
● For Flex series

### [SD4030B3 Connection diagrams]

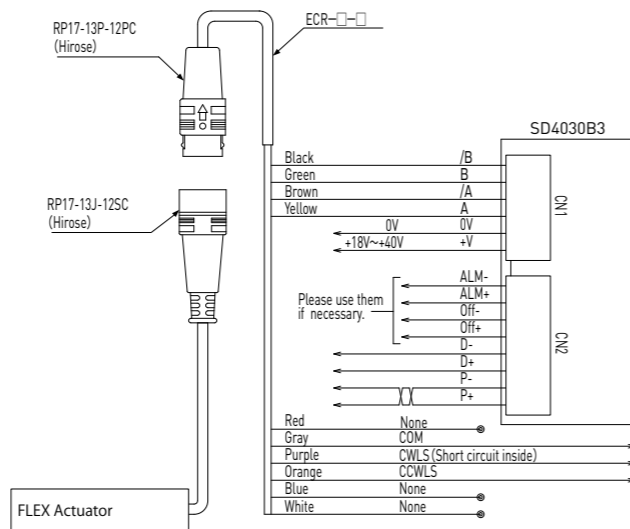
**Applicable Motor**  
Minebea Moter 10PM-K202B



#### [E1 connector]



#### [HIROSE connector]

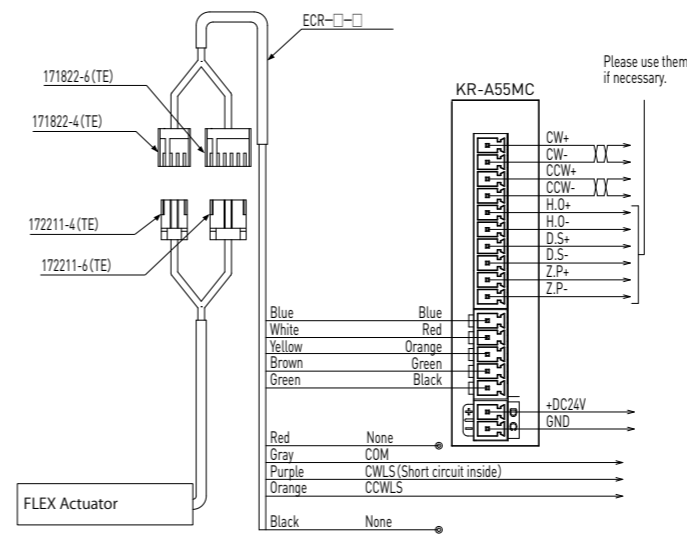


### [KR-A55MC Connection diagrams]

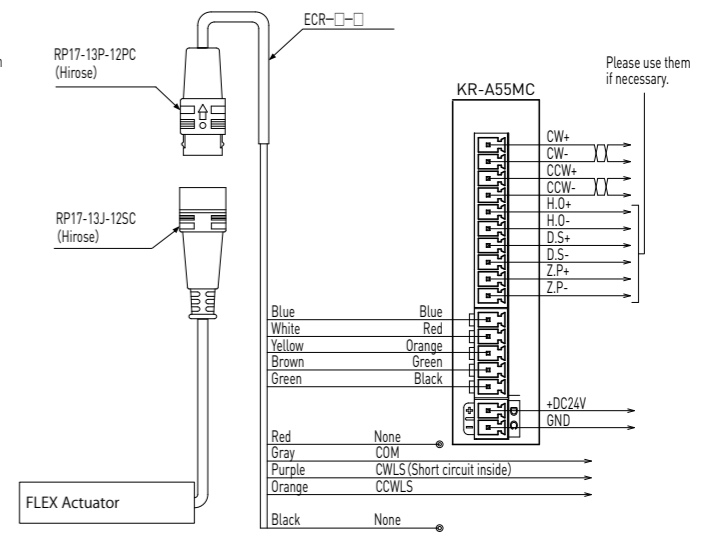
**Applicable Motor**  
Oriental Moter PK523HPB



#### [E1 connector]



#### [HIROSE connector]

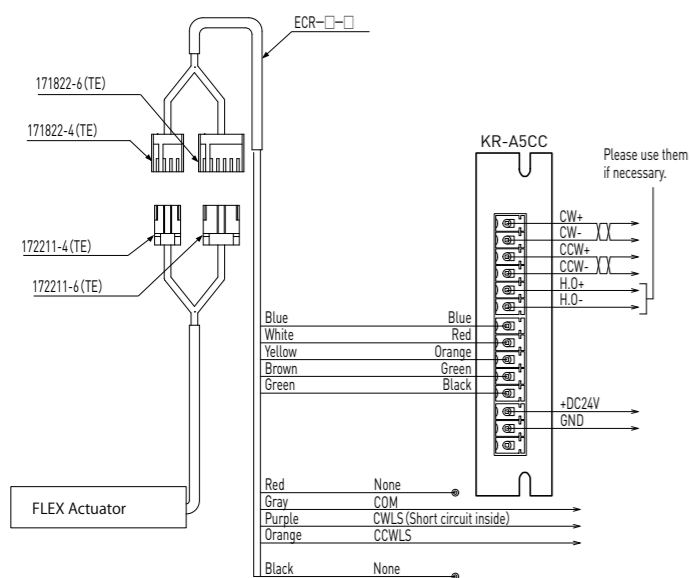


### [KR-A5CC Connection diagrams]

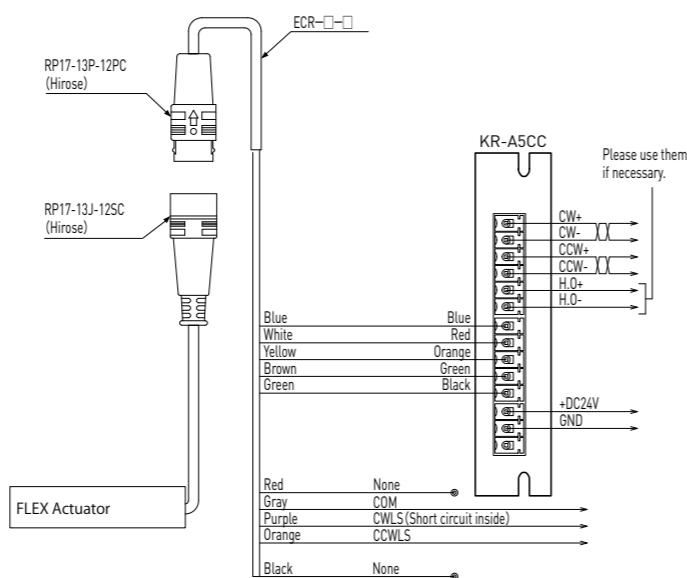
**Applicable Motor**  
Oriental Moter PK523HPB



#### [E1 connector]



#### [HIROSE connector]



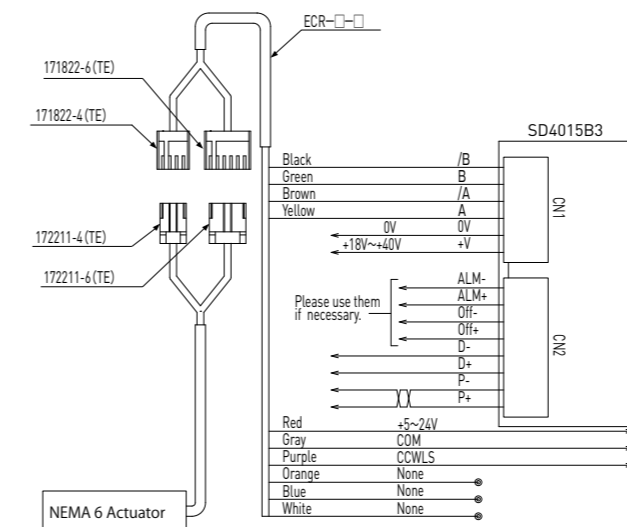
● For CAS series

### [SD4015B3 Connection diagrams]

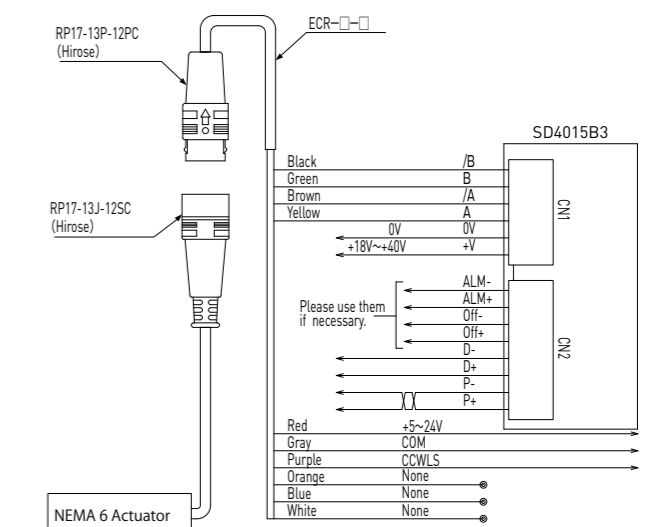
**Applicable Motor**  
Sanyo SH2141-551



#### [E1 connector]



#### [HIROSE connector]



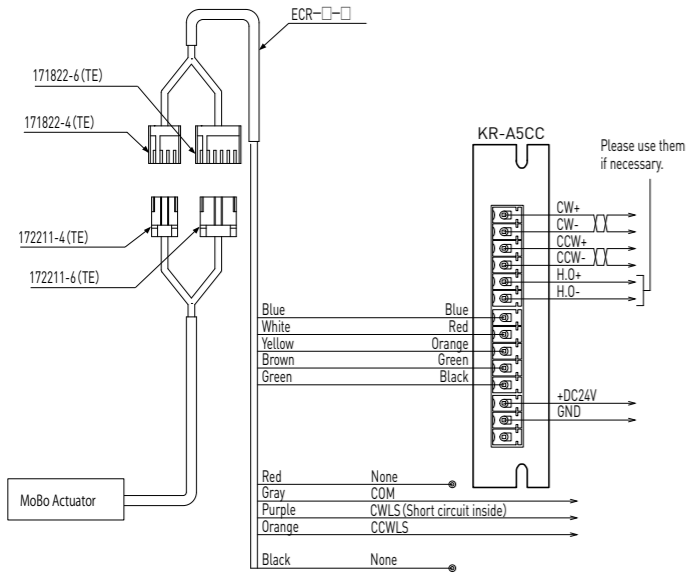
## ● For MA series

## 【KR-A5CC Connection diagrams】

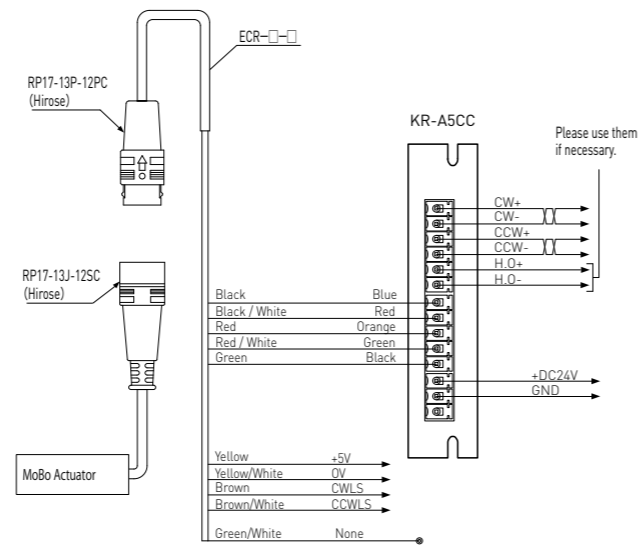
**Applicable Motor**  
TAMAGAWA SEIKI Dedicated Motor for Linear Actuator



## 【EI connector】



## 【HIROSE connector】

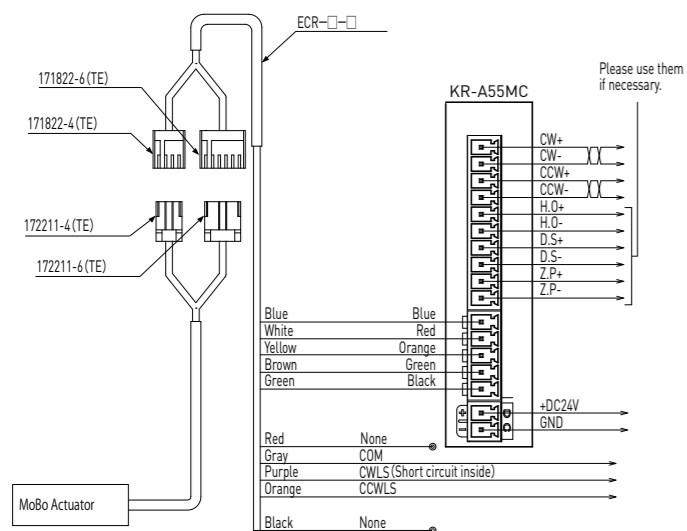


## 【KR-A55MC Connection diagrams】

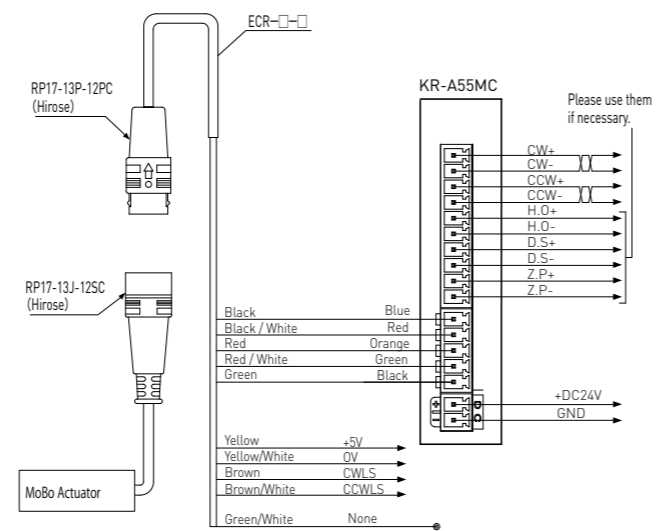
**Applicable Motor**  
TAMAGAWA SEIKI Dedicated Motor for Linear Actuator



## 【EI connector】



## 【HIROSE connector】



## ● Precaution of handling and operating

## 【Precaution for safety】

- 1) Before using these products, please read instruction manuals and follow the precautions below.
- 2) Do not hit or drop the Shaft, do not apply Axial or Radial load exceeding specifications, it may cause malfunction.
- 3) Before using, please check that the product has no defect, and product is the same as your order.
- 4) Do not disassemble each component, dust may get inside the product. It may deteriorate accuracy.
- 5) Please prevent contamination from dust or swarf. Dust or swarf may cause damage to Ball Screw/Lead Screw, which lead to deteriorating the function.
- 6) Single axis Actuator should be checked the lubricant condition every 2 to 3 months. If Grease is contaminated, remove old Grease and replace with new one. Grease should be the same as the original Grease, which is described in dimension table.
- 7) Do not use Single axis Actuator exceeding our specifications in Load or Speed.
- 8) Do not use Single axis Actuator beyond the Maximum Acceleration.
- 9) Do not hold the Motor leads and Sensor leads, this may result in damage to the device or injury. The Motor lead wire should be fixed securely.
- 10) Keep away from Magnetic memory device.

## 【Precaution for safety】

- 1) If abnormal odor, noise, smoke overheating, or vibration occurs, stop operation immediately and turn the power off.
- 2) Do not use exceeding rated current.
- 3) The Motor may overheat depending on the load conditions or driver used. Make sure that the Motor surface temperature does not exceed 80°C when in use.
- 4) Do not bend, pull or pinch the Motor lead wire.
- 5) Do not touch moving parts during operation.
- 6) Please switch off the Driver, when inspection or maintenance.

## 【Operating environment】

- 1) Operating environment should be 0~40°C in temperature and 20~80%RH in humidity. Do not use these products under dew condensation, corrosive gas or inflammable gas environment.
- 2) Do not use these products under strong electric field, strong magnetic field.
- 3) Please prevent from swarf, oil mist, cutting fluid, Water/moisture, salt spray, organic solvent and other contamination.
- 4) Single axis Actuator cannot be used under the vibration, impact, vacuum, and other special environment.