KOGANEI

http://www.koganei.co.jp

Catalog No.BK-C0049

NEW Products

Electric actuators

Elewave Series

- Electric Hand Flat Type (Standard stroke type/Long stroke type)
- Electric Hand (Standard type/High-speed type)
- Electric Rotary Actuator ●NS Slider

NEW

CC-Link

The CC-Link remote device type has been added to the controller for the electric hand flat type.

Electric hand flat type CE

The best Low-profile design in the industry!
Lightweight/compact
(*Based on KOGANEI research)

*With the EW2H8

- Contribute to robot downsizing with the low-profile lightweight electric.
- Achieve high-speed robot operation!

Standard stroke type Page ⑪

EW2H8

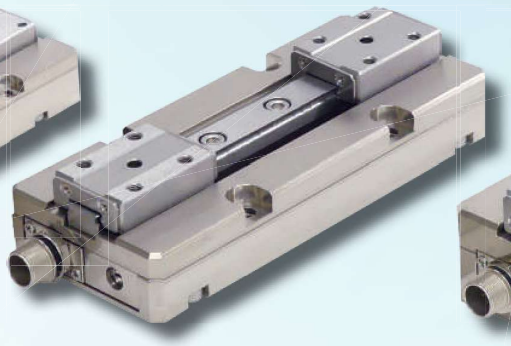
EW2H18

EW2H28

Long stroke type Page ⑮

EW2HL8

EW2HL18



EW2HL28

<Connector directions>

*One of the above four connector directions can be selected.

	EW2H8	EW2HL8	EW2H18	EW2HL18	EW2H28	EW2HL28
Gripping force (N)	8 to 16		18 to 33		28 to 50	
Open/closed stroke (mm) [in.]	10 [0.394] (5 [0.197] on one side)	32 [1.260] (16 [0.630] on one side)	14 [0.551] (7 [0.276] on one side)	42 [1.654] (21 [0.827] on one side)	18 [0.709] (9 [0.354] on one side)	52 [2.047] (26 [1.024] on one side)
Body mass (kg) [lb]	0.09 [0.198]	0.14 [0.309]	0.16 [0.353]	0.25 [0.551]	0.36 [0.794]	0.48 [1.058]

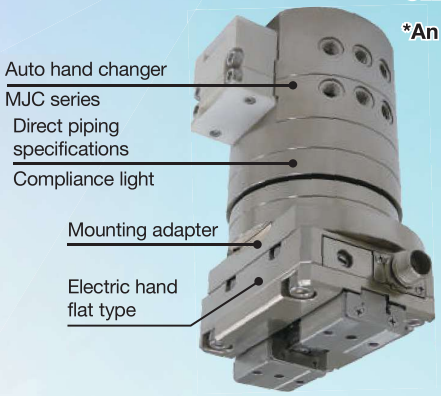
⚠ CAUTION Make sure to read the safety precautions on page ⑧ before use.

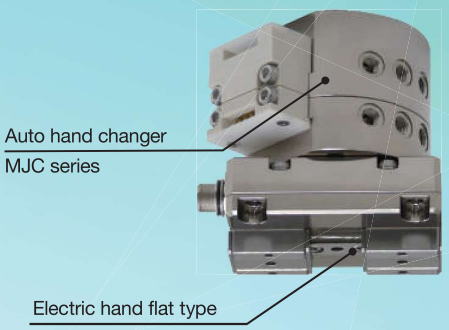
Unify with auto hand changer and compliance light

Quick start

Quick origin return operation allows swift operation after the controller is powered on or auto hand changer is linked!

*An origin return is recommended after linking with the auto hand changer.

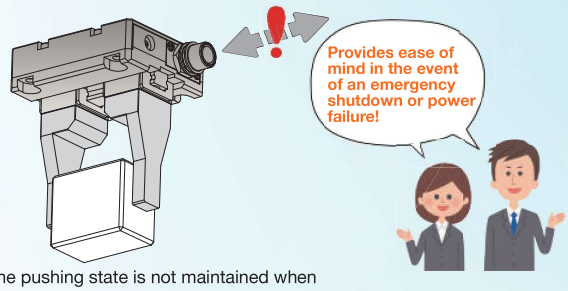




Combinations of through hole (for direct mounting) and tap dimensions enable easy installation!
For information on combining the electric hand flat type with an auto hand changer, see page ⑲.

Features

Fall prevention function with self-lock mechanism!



*The pushing state is not maintained when the power is OFF.

No worries in case of disconnection!

Immediately solve the problem by replacing the relay cable (robot cable) because the connector is built-in!

Controller

● Point input type
(NPN specifications/PNP specifications)

● CC-Link Remote I/O type

For details on the controller, see pages ⑲ to ㉒.

NEW ● CC-Link Remote device type

Operations previously executed with a teaching box or serial communication can now be controlled with CC-Link only.
- **"Literal setting" and "literal operation"**
- **"Data configuration" for point data and parameter data**
- **"Data retrieval" for point data and parameter data**
- **"Data management" for currently occurring alarms and current position, etc.**

	CC-Link Remote device type	CC-Link Remote I/O type	Point input type
Each settings	CC-Link or Teaching box or Support software	Teaching box or Support software	Teaching box or Support software
Operation instructions	CC-Link	CC-Link	I/O

Electric actuators

Elewave Series

Based on the concept of a compact and lightweight design at a low-price.

Electric hand

Standard type: EWHA ☐ A
High-speed type: EWHA ☐ H

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Compact and lightweight electric hands that support high-speed operation

- Soft touch with desired speed control
- Desired stroke setting
- High precision and high rigidity with linear guide
- Mode selection for positioning and gripping force control
- Force control and missed step detection with stepping motor + encoder
- Sense gripping position with communication function
- Size detection enables workpiece selection

Electric rotary actuator

EWHRT

Page 41

Table type rotary actuators (adopting a hollow shaft) with seven torque variations

0.1 N·m [0.9 in·lbf], **0.25 N·m** [2.2 in·lbf], **0.5 N·m** [4.4 in·lbf], **1.0 N·m** [8.9 in·lbf], **2.0 N·m** [17.7 in·lbf], **4.0 N·m** [35.4 in·lbf], **6.0 N·m** [53.1 in·lbf]

Hollow diameter ϕ 6 [0.236] (EWHRT1A, EWHRT3A, EWHRT5A)
ϕ 12 [0.472] (EWHRT10A, EWHRT20A)
ϕ 17 [0.669] (EWHRT40A, EWHRT60A)

- High precision and high resolution positioning (eliminates backlash with unique structure)
- Stepping motor and missed step detection encoder
- Desired swing angle setting (64 points)
- Desired acceleration and deceleration (smooth, shockless operation even at low speed)
- Continuous operation in one direction
- Optional brake (the EWHRT1A has no brake option)

NS slider
EWM5

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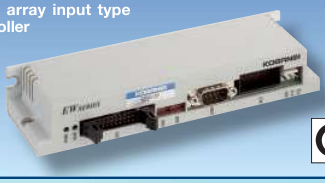
Compact and thin square form actuator to stir creativity

- High-speed type (120 mm/s) [4.724 in/sec] and high thrust type (50 N)
- Short stroke actuator that minimizes dead space in the stroke direction (st 20, 40)
- Long table type suitable for push control selectable
- Multi-point positioning operation available (64 points)
- Desired acceleration and deceleration (smooth, shockless operation even at low speed)
- Soft touch with desired speed control
- High precision and high rigidity with linear guide
- Mode selection for positioning and thrust control
- Force control and missed step detection with stepping motor + encoder
- Sense pushing position with communication function (length measurement function included)
- Size detection enables workpiece selection

● Point input type controller

● Pulse array input type controller



Support Software

(supports Windows 95, 98, 2000, Me, NT4.0, XP, VISTA, 7, 8, 8.1, and 10)*

*Windows is a registered trademark of Microsoft Corporation.
*The electric hand flat type supports Windows XP (SP3), VISTA, 7, 8, 8.1, and 10

Free-of-charge

- Elewave Series dedicated support software
- Can be downloaded free-of-charge from the KOGANEI website
- Parameters and point data can be edited from the support software
- Movement to a specified point can be performed from the support software

Teaching Box

Page 27, 59

- Settings such as parameters and point data can be configured
- Point movement and teaching movement can be performed
- Simple programming function included

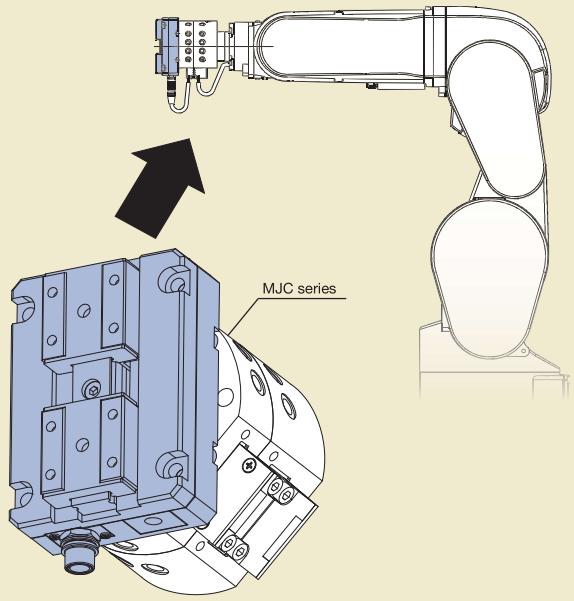
⚠ CAUTION Make sure to read the safety precautions on page 8 before use.

Expand the possibilities of manufacturing with user ideas!

Application example

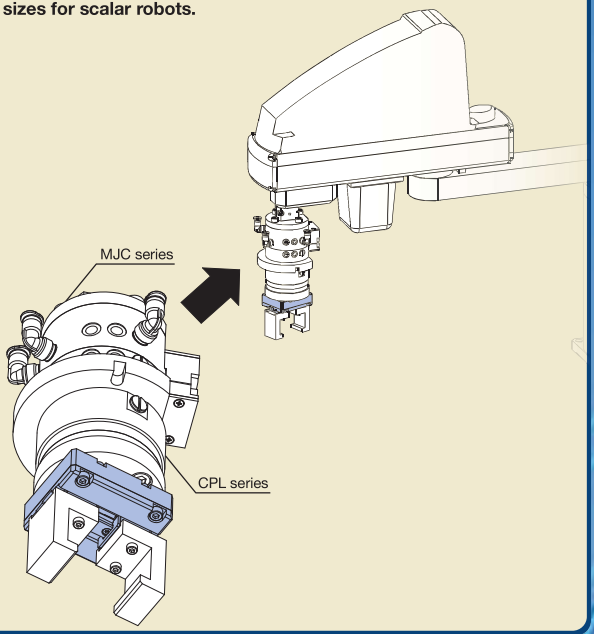
Electric hand flat type unit (1)

Can be directly mounted to an auto hand changer (MJC Series).
The low-profile, lightweight design promotes increased takt or more compact sizes for vertical multi-joint robots.



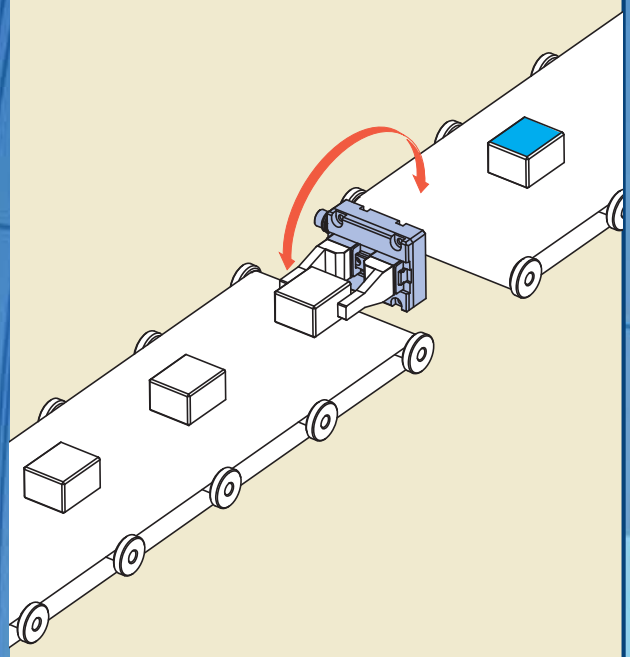
Electric hand flat type unit (2)

Can be mounted to a compliance light (CPL Series) with a dedicated adapter.
Can be directly mounted to the CPL Series or an auto hand changer (MJC Series).
The lightweight design promotes increased takt or more compact sizes for scalar robots.



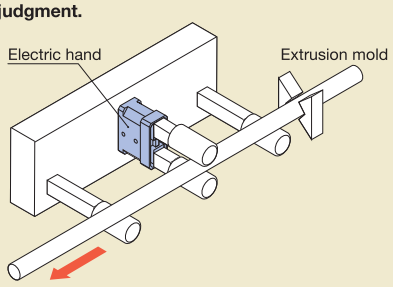
Workpiece Reversal

An electric hand flat type can be used to perform reversal in narrow areas.



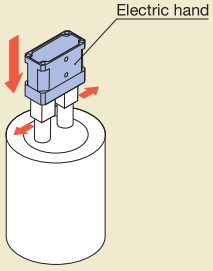
Measurement of Outer Diameter

Example of preventing the inclusion of faulty tube mold items (with a different diameter)
Use the gripping mode and communication function to read external diameter data of the gripped tube to a PC to perform tolerance judgment.



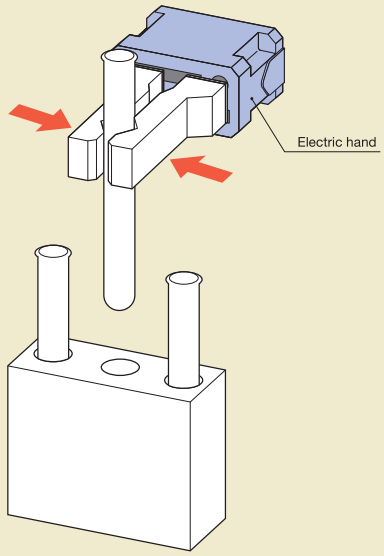
Measurement of Inner Diameter

Example of performing inner diameter judgment on containers and inner diameter judgment after making holes
Attach the jig to the hand tip, and perform tolerance judgment by touching the inner surface of the workpiece with the hand in the gripping mode.



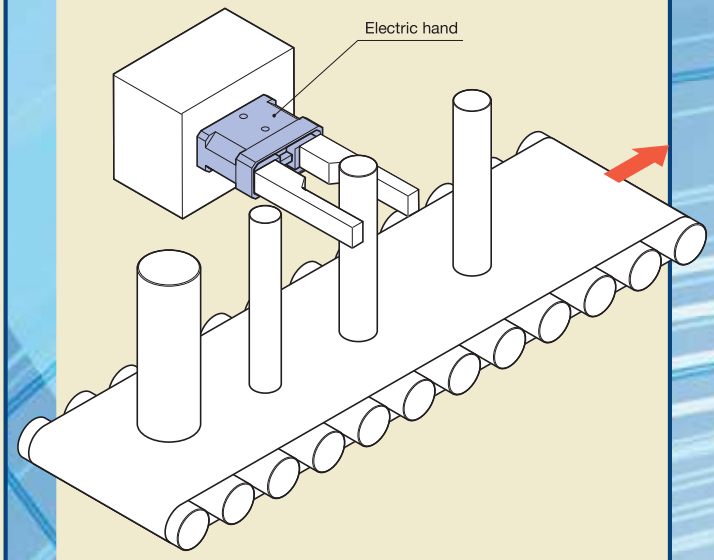
Gripping a Test Tube

Example of gripping delicate workpieces like a test tube



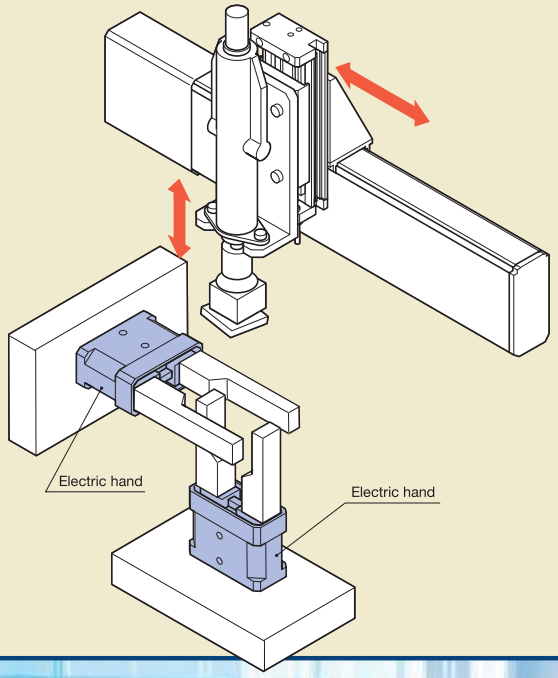
Workpiece Tolerance Determination

Example of preventing the inclusion of workpieces with a different diameter and preventing the leak of faulty items
Grip the workpiece with the gripping mode and perform tolerance judgment.

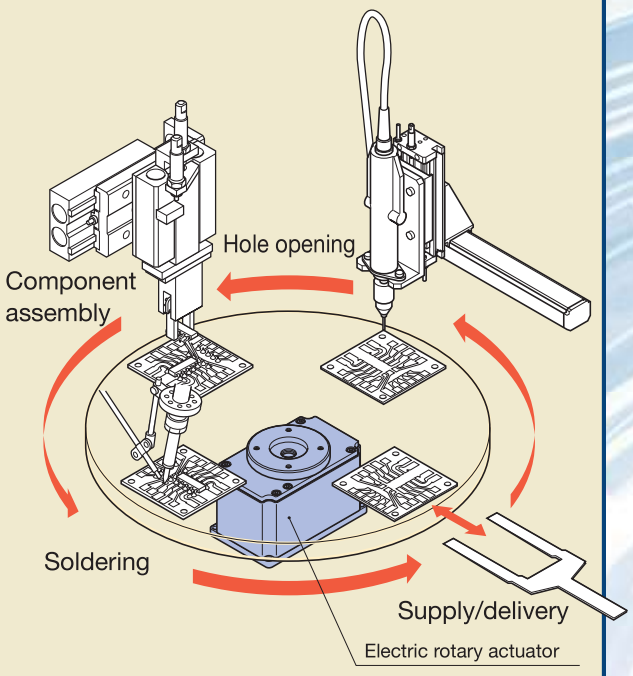


Correction of Parts Position

Example of gripping the workpiece with the positioning mode to perform position control
Perform part positioning correction between pick and place in the IC mounting process. Perform correction in the vertical and horizontal directions simultaneously with two electric hands.



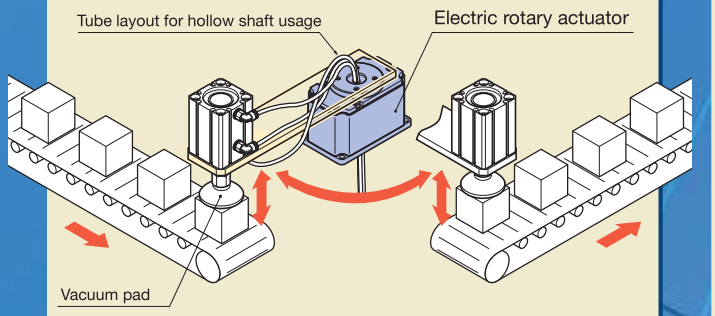
Indexing Table for Automatic Assembly



Application example

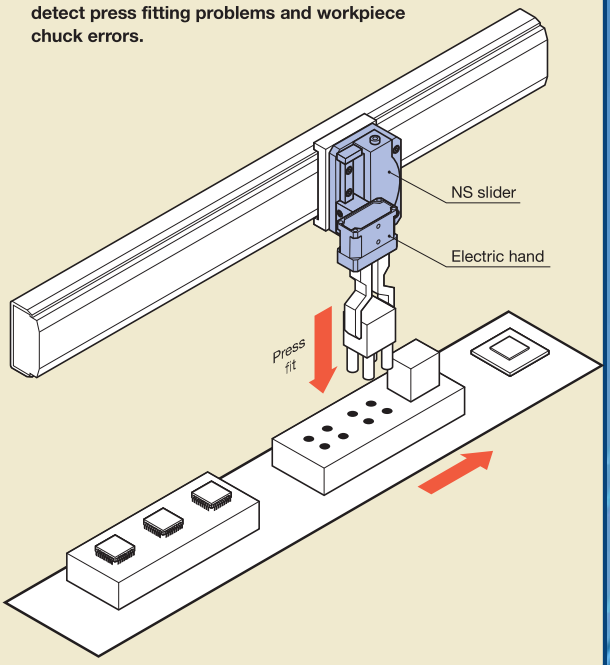
Swing Loading the Workpiece

Example of tube layout for hollow shaft usage



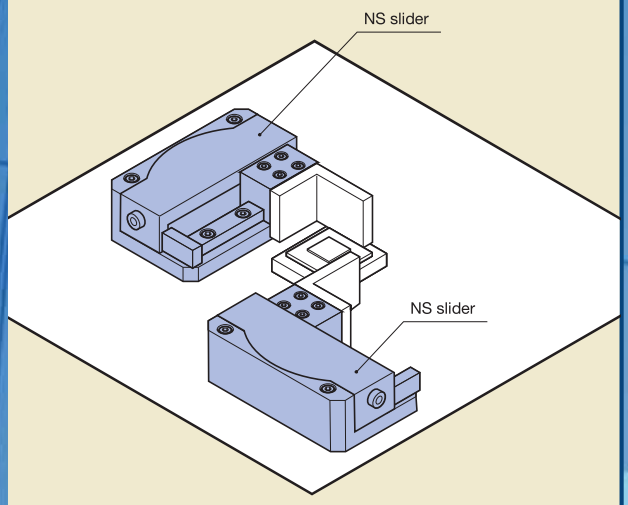
Workpiece Press Fitting

Example of press fitting terminals of compact parts and case caulking, etc.
Perform climb motion with positioning mode and workpiece press fitting with pushing mode. Add judgment function to detect press fitting problems and workpiece chuck errors.



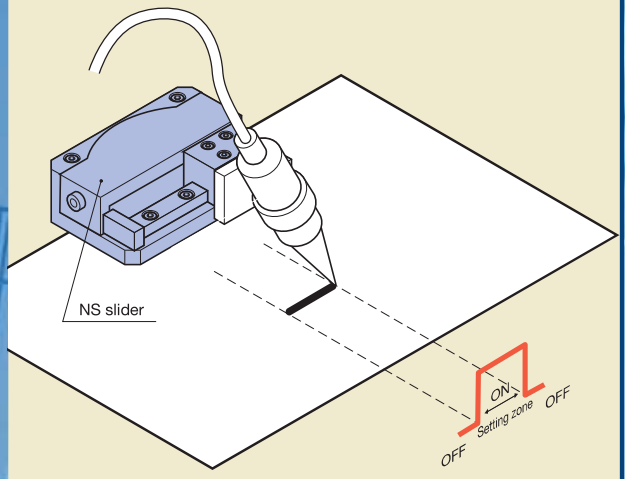
Correction of Parts Position

Example of gripping the workpiece with the positioning mode to perform position control
Perform device positioning correction in the SMT process. Perform correction in the vertical and horizontal directions simultaneously with two NS sliders.



Zone Output (Pulse array input type controller only)

Example of using zone output
Perform dispensing by performing external output at regular intervals via zone output during point movement. This can be used for simple straight line application of solvents and applying a fixed amount of coating, etc.



Safety Precautions (Elewave)

Make sure to read the safety precautions before use.

Before selecting and using the products, please read all the Safety Precautions carefully to ensure proper product use.
The Safety Precautions described below are to help you use the product safely and correctly, and to prevent injury or damage to you, other people, and assets.
Make sure to also follow the safety regulations in JIS B 8433 (safety requirements for industrial robots).

The directions are ranked according to degree of potential danger or damage: "DANGER", "WARNING", "CAUTION" and "ATTENTION."

⚠ **DANGER**	Indicates situations that can be clearly predicted as dangerous. Failure to avoid the indicated danger creates the risk of death or serious injury. It could also result in damage or destruction of assets.
⚠ **WARNING**	Indicates situations that, while not immediately dangerous, could become dangerous. Failure to avoid the indicated danger creates the risk of death or serious injury. It could also result in damage or destruction of assets.
⚠ **CAUTION**	Indicates situations that, while not immediately dangerous, could become dangerous. Failure to avoid the indicated danger creates the risk of minor or semi-serious injury. It could also result in damage or destruction of assets.
⚠ **ATTENTION**	While there is little chance of injury, this content refers to points that should be observed for appropriate use of the product.

■ This product was designed and manufactured for use in general industrial machinery.

■ When selecting and handling equipment, the system designer or another person with sufficient knowledge and experience should always read the Safety Precautions, catalog, instruction manual and other documentation before commencing operation. Improper handling is dangerous.
■ The customer is responsible for verifying and judging the compatibility of these products with your systems.
■ After reading the Instruction Manual, catalog, and other documentation, always store them in a location that allows easy availability for reference to users of this product.
■ Whenever transferring or lending the product to another person, always attach the catalog, instruction manual, and other documentation to the product where they are easily visible in order to ensure that the new user can learn how to use the product safely and properly.
■ The danger, warning and caution items listed under these Safety Precautions do not cover all possible contingencies. Read the catalog and instruction manual carefully, and always keep safety first.

⚠ DANGER

- Do not use the product for the purposes listed below:
  1. Medical equipment related to maintenance or management of human lives or bodies.
  2. Mechanisms, machines, or equipment designed for the purpose of moving or transporting people.
  3. Critical safety components in machines or equipment.
  This product has not been planned or designed for purposes that require high levels of safety. Using the product in any of the ways described above creates the risk of loss of human life.
- Do not use in locations with or near dangerous substances such as flammable or ignitable substances. The product could ignite or burst into flames.
- While the product is in operation or in the state where it can be operated, avoid entering the operation range of the machine. In addition, do not make any adjustments to the interior or to the attached mechanisms while in operation. The actuator can move suddenly, possibly resulting in injury.
- Persons who use a pacemaker, etc., should keep a distance of at least 1 meter [3.28 ft.] away from the product. There is a possibility that the pacemaker will malfunction due to the magnetism of the strong magnet built into the product.
- When attaching the product, always firmly support and secure them (including workpieces) in place. Dropping or falling of the product or abnormal operation could result in injury.
- Never attempt to modify the product. It could result in abnormal operation leading to injury, electrocution, or fire, etc.
- Never attempt inappropriate disassembly or assembly of the product's basic construction, or of its performance or functions. This could result in injury, electrocution, fire, etc.
- Do not splash water on the product. Splashing it with water, washing it, or using it underwater could result in abnormal operation of the product, leading to injury, electrocution, fire, etc.

⚠ WARNING

- Do not use an actuator as a device for absorbing the shocks and vibrations of machines or equipment. Doing so could possibly result in injury or damage to the machines or equipment.
- Do not use the product in excess of its specification range. Doing so creates the risk of product breakdown, loss of function, or damage. It could also drastically reduce operating life.
- Design safety circuits or equipment to ensure that damage to the product or injury does not occur if the device stops in the event of a system error such as an emergency stop or power failure.
- When using the product in the following locations, make sure to implement adequate shielding measures.
  Failure to do so may lead to a malfunction, which can cause damage to the product or injury.
  1. Locations where large currents and strong magnetic fields are emitted
  2. Locations where noise is emitted due to electrostatic, etc.
  3. Locations that may be exposed to radiation
- Make sure to implement type D grounding (grounding resistance 100 Ω or less).
  There is a possibility of electrocution and malfunction due to electric leakage.
- Before installing the product to equipment, etc., confirm that the installation, wiring, and operating commands are appropriate. Using the product without checking could possibly result in injury caused by contact with moving parts or damage to the machines or equipment.
- Before supplying electricity to the device and before starting operation, always conduct a safety check of the area of machine operation. Unintentional supply of electricity could possibly result in electrocution, or in injury caused by contact with moving parts.
- Do not touch the terminal and the miscellaneous switches, etc., while the device is powered on. There is a possibility of electrocution and abnormal operatio.
- Do not damage the cords such as the cables.
  Damaging, forcibly bending, pulling, winding, or placing heavy objects on, or pinching cords could result in fire or electrocution due to electric leakage or conduction failure, or cause abnormal operation, etc.
- If abnormal noise is emitted or vibrations become abnormally high, immediately stop operation. Continuing to use the product could result in damage or break it, resulting in abnormal operation, or runaway, etc.
- Do not throw the product into fire.
  The product could explode and/or release toxic gases.
- Do not sit on the product, place your foot on it, or place other objects on it.
  Doing so could result in a fall, injury due to the product falling down or falling over, damage to the product, or malfunction or runaway, etc. due to damage.
- When conducting any kind of operation for the product, such as maintenance, inspection, repair, or connection/disconnection or replacement of piping, always turn off the electricity supply completely.
- Use the product within the recommended load and speed.

⚠ CAUTION

- Do not use the product in locations that are subject to direct sunlight (ultraviolet rays); locations with high humidity, dust, salt, or iron powder, or atmospheres including organic solvents, phosphate ester type hydraulic oil, sulfur dioxide, chlorine gas, acids, etc. It could lead to early shutdown of some functions, a sudden degradation of performance, and a reduced operating life.
- Do not use the product in atmospheres including corrosive gas, combustible gas, or flammable liquid, etc. It could lead to degraded strength due to rusting or cause the motor to ignite or explode.
- Make sure to use the specified controller for the product. Using another controller may cause product failure or runaway, etc.
- Install the main unit and controller in a location with low levels of dust. Installing them in a location with high levels of dust may cause malfunction.
- Do not install the product in a location subject to strong vibrations (4.9 m/s^2 [0.500 G] or higher). Strong vibrations may cause malfunction.
- When mounting the product, leave room for adequate working space around it. Failure to do so will make it more difficult to conduct routine maintenance, which could eventually lead to system shutdown or damage to the product.
- Do not bring magnetic media, within 1 meter [3.28 ft.] of the product. There is the possibility that the data on the magnetic media will be destroyed due to the magnetism of the magnet.
- Sitting on the product, placing your foot on it, or placing other objects on it may damage, dent, or deform the moving parts. It could damage or break it, resulting in operation shutdown or reduced performance.
- When performing installation or adjustment work, indicate that work is being performed to ensure that the power is not unintentionally turned ON, etc. It could cause electrocution or injury due to sudden actuator operation.
- Never conduct an insulation resistance test or withstand voltage test on the controller.
- Do not apply excessive force to the base of the main unit cable.
- Do not secure the connector of the main unit cable with bending moment applied.

⚠ ATTENTION

- When considering the possibility of using this product in situations or environments not specifically noted in the Catalog or Instruction Manual, or in applications where safety is an important requirement such as in an aircraft facility, combustion equipment, leisure equipment, safety equipment, and other places where human life or assets may be greatly affected, take adequate safety precautions such as the application with enough margins for ratings and performance or failsafe measures. Be sure to consult us with such applications.
- Isolate the operating parts of the machines or equipment, etc. with a protective cover, etc. to ensure that they do not come into contact with the human body.
- Configure the control so that the workpiece does not fall down in the event of a power failure.
  Implement fall prevention control for workpieces, etc. in the event of a power failure or emergency stop of the machines or equipment.
- Check the instruction manual for information on product installation and wiring.
- When handling the product, wear protective gloves, protective goggles, safety shoes etc. as required to maintain safety.
- Perform routine maintenance to confirm that the system requirements are met in order to prevent accidents.
- When the product becomes unusable or unnecessary, dispose of it properly as industrial waste.
- For inquiries about the product, contact your nearest KOGANEI sales office or the KOGANEI overseas group. The addresses and telephone numbers are shown on the back cover of this catalog.

⚠ Others

- Make sure to follow the items below.
  1. When using this product in systems, always use genuine KOGANEI parts or compatible parts (recommended parts). When conducting maintenance and repairs, always use genuine KOGANEI parts or compatible parts (recommended parts).
     Always observe the prescribed methods and procedures.
  2. Never attempt inappropriate disassembly or assembly of the product's basic construction, or of its performance or functions.

KOGANEI shall not be held responsible for any problems that occur as a result of these items not being properly observed.

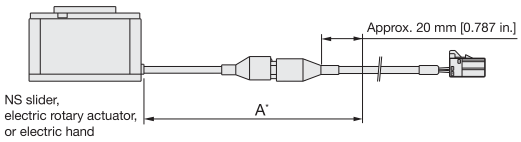
General Precautions

Environment

1. Avoid using the main unit, controller, or teaching box in locations subject to water droplets or oil droplets, or dusty locations.
2. Avoid using the product in locations where corrosive gases such as sulfuric acid or hydrochloric acid are emitted.
3. Avoid using the product in locations subject to strong vibrations or shocks.

Wiring

1. The method for connecting the I/O wire for connecting to external devices such as a controller or programmable controller differs between the previous **EWC-R** and **EWC-H** controllers and the current **EWHC-RA**, **EWHC-RS**, **EWHCP-RA**, **EWHCP-RS**, **EWHC-NH**, **EWHCP-NH**, **EW2C-H-NP**, and **EW2C-H-PN** controllers. When replacing an existing controller, make sure to check the connection method in the instruction manual.
2. Do not use the cable between the main unit and connector (indicated by A in the figure below) in a manner where it will be repeatedly bent.



* Approximately 50 mm [1.969 in.] from the main unit connector for the EWHRT40A and EWHRT60A electric rotary actuators.

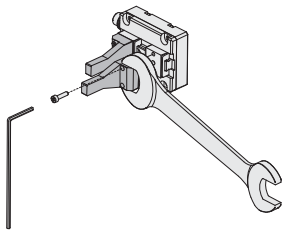
3. Do not apply excessive force to the base of the cable on the main unit side. Secure the cable so that a load such as twisting or pulling is not applied to the connector. Do not secure the resin connector with bending moment applied.
4. Secure the cable so that a load such as twisting, pulling, or bending is not applied to the connector of the controller.

Others

1. Do not apply external force to the claw or workpiece attached to the main unit. Excessive force or external shocks may cause parts to become damaged or displaced. Make sure to check the operation and the settings, as this can cause faulty operation or displacement of the workpiece or claw.

   In particular, the table does not move by external force with the electric hand flat type. Do not apply excessive shocks to the table. To manually move the table, use the straight groove for table operation.

   *The straight groove for table operation on the side of the main unit, which is used for manually operating the table, cannot be used if "-1" is selected as the cable direction. (EW2H8, EW2H18, EW2HL8, EW2HL18)
2. Make sure to read the instruction manual before use.
3. When mounting the claw to a table, perform screw tightening after securing the claw so that excessive force or shocks are not applied to the table or guide.



*See the table below for the torque for tightening to a table.

Type	Thread size	Thread depth (mm [in.])	Maximum tightening torque (N·m [in·lbf])
EW2H8	M2.5	3 [0.118]	0.36 [3.2]
EW2H18	M3	3 [0.118]	0.63 [5.6]
EW2H28	M3	3.5 [0.138]	0.63 [5.6]
EW2HL8	M2.5	3 [0.118]	0.36 [3.2]
EW2HL18	M3	3 [0.118]	0.63 [5.6]
EW2HL28	M3	3.5 [0.138]	0.63 [5.6]
EWHA12A	M2.5	3 [0.118]	0.36 [3.2]
EWHA24A	M3	3 [0.118]	0.63 [5.6]
EWHA36A			
EWHA6H	M2	3 [0.118]	0.18 [1.6]
EWHA12H	M2.5	2.5 [0.098]	0.36 [3.2]
EWHA24H	M3	3.5 [0.138]	0.63 [5.6]
EWHA36H			
NS slider	M3	4 [0.157]	0.63 [5.6]

4. Use a combination of electric actuator and controller indicated in the chart on page ㊾ .
5. Provide sufficient space around the controller (20 mm [0.787 in.] or more) to ensure ventilation.
6. Use the F.G wire of the power cable for the ground terminal of the controller.
   When using the EW2C-H-CC or EW2C-H-CCD (CC-Link type), it is recommended that the F.G wire of the power cable is grounded at a distance of 250 mm [9.843 in.] or less. If the distance is longer than 250 mm [9.843 in.], external noise may affect communication.
   The following measures, including connections with peripherals, are required to conform with CE standards.
   1. Attach a clamp filter to the power cable (2 turns).
   2. Attach a clamp filter to the controller side of the relay cable.
      - EW2C-H-NP, EW2C-H-PN: 1 (2 turns)
      - EW2C-H-CC: 3 (2 turns each)
      - EW2C-H-CCD: 4 (2 turns each)
   3. Do not use the relay cable bundled together with other cables or coiled.
   4. Use the CC-Link cable with a maximum length of 30 m [98.425 ft.].
   5. When operating the product with a teaching box (EW2TB) connected, attach a clamp filter (2 turns) to the cable of the teaching box.
7. The grease film may be lost if reciprocations are performed within a short distance.
   It is recommended that you perform about five reciprocations at full stroke every 5,000 to 10,000 reciprocations to restore the grease film.
8. Set the mass of the workpiece to actually grip to about 1/10 to 1/20 of the gripping force.
9. When moving the electric hand with the workpiece gripped, set the mass of the workpiece to about 1/30 to 1/50 of the gripping force.
10. Use the figures in the specifications charts and graphs as rough estimates, as the mass of the workpiece that can be gripped differs greatly according to factors such as the claw material and shape, state of the gripping surface, and workpiece transfer speed.
11. When pressing (gripping) a workpiece, be sure to use the Pressing mode (gripping mode). Pressing (gripping) in Positioning mode will result as error and will damage the actuator.

Electric hand

Flat type
Standard stroke

Specifications

● Main unit basic specifications

Item \ Type			EW2H8	EW2H18	EW2H28
Motor			Brushless motor		
Maximum speed (one side, when using positioning mode)		mm/s [in/sec]	50 [1.969]		
Maximum speed (one side, when using gripping mode)		mm/s [in/sec]	20 [0.787]	30 [1.181]	20 [0.787]
Minimum speed (one side)		mm/s [in/sec]	5 [0.197]		
Maximum gripping force*1		N	8 to 16	18 to 33	28 to 50
Operating temperature range		°C [°F]	0 to 40 [32 to 104]		
Open/closed stroke		mm [in.]	10 [0.394] (5 mm [0.197 in.] on one side)	14 [0.551] (7 mm [0.276 in.] on one side)	18 [0.709] (9 mm [0.354 in.] on one side)
Repeated positioning precision		mm [in.]	±0.05 [0.002]		
Dynamic allowable moment*2	Mp	N·m [in·lbf]	0.05 [0.4]	0.1 [0.9]	0.3 [2.7]
	My	N·m [in·lbf]	0.03 [0.3]	0.1 [0.9]	0.4 [3.5]
	Mr	N·m [in·lbf]	0.06 [0.5]	0.2 [1.8]	0.8 [7.1]
Maximum payload*3 (one side)		kg [lb]	0.2 (0.1) [0.441 (0.220)]	0.3 (0.15) [0.661 (0.331)]	0.4 (0.2) [0.882 (0.441)]
Mass		kg [lb]	0.09 [0.198]	0.16 [0.353]	0.36 [0.794]
Applicable controllers			**EW2C-H-NP**, **EW2C-H-PN**, **EW2C-H-CC**, **EW2C-H-CCD**		

*1 The maximum gripping force at gripping level 5. For details on the gripping force and gripping speed, see the graph on page ㉚.
*2 The dynamic allowable moment is safety coefficient 10 of the static allowable moment (page ㉙). However, the value is not guaranteed.
*3 Total mass of both side claws mounted to table.

Order Codes

EW2H □ - □ - □ - □ - □ - □

Elewave electric hand flat type

Size
8: Gripping force 8 N
18: Gripping force 18N
28: Gripping force 28N

Cable direction*1
Not specified: Straight
1: Direction 1 fetching*2
2: Direction 2 fetching
3: Direction 3 fetching

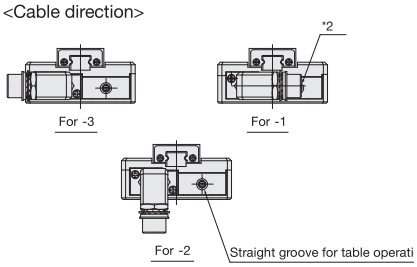
Controller type
Not specified: Without controller
NP: Point input type (NPN specifications)
PN: Point input type (PNP specifications)
CC: CC-Link remote I/O type
CCD: CC-Link remote device type

DIN rail mounting plate
Not specified: Without mounting plate
DP: With mounting plate (cannot be selected without controller)

Locating dowel pin
Not specified: Without locating dowel pin
P: With locating dowel pin (two included)

Cable length (for relay)
Not specified: Without cable
3L: 3 m [9.843 ft.]
5L: 5 m [16.404 ft.]

<Cable direction>



*1 The cable direction cannot be changed after purchase. Select the direction after confirming the state of the settings in advance.
*2 **The EW2H8 and EW2H18** cannot use the straight groove for table operation.
The EW2H28 can only use the straight groove when a relay cable is not attached.

■ Additional Parts

● Controller

Point input type

EW2C - H - □ - □

Controller type
NP: Point input type (NPN specifications)
PN: Point input type (PNP specifications)

DIN rail mounting plate
Not specified: Without mounting plate
DP: With mounting plate

*See pages ⑲ and ⑳ for the controller specifications.

CC-Link type

EW2C - H - □ - □

Controller type
CC: CC-Link remote I/O type
CCD: CC-Link remote device type

DIN rail mounting plate
Not specified: Without mounting plate
DP: With mounting plate

*See pages ㉑ and ㉒ for the controller specifications.

● Accessories: Power cable, I/O cable

Power cable

Cable for I/O

● Accessories: Power cable, terminal resistance, connector for CC-Link

Power cable

Terminal resistance

Connector for CC-Link

Additional parts

● Cable

EW2K □ - □

Length (types P and I cannot be selected)
Not specified: Unspecified
008L: 80 mm [3.150 in.]
015L: 150 mm [5.906 in.]
025L: 250 mm [9.843 in.]
1L: 1 m [3.281 ft.]
3L: 3 m [9.843 ft.]
5L: 5 m [16.404 ft.]

Type
A: For relay
P: For power supply
I : For I/O
D: For daisy chain (for RS485 communication)
N: For communication (for RS485 communication)
BA: Relay cable (loose wire) for main unit*
BB: Relay cable (loose wire) for controller*

*For auto hand changer (MJC) wiring
*The robot cable for relay (A, BA, BB).

Combinations of cable types and lengths

Type \ Length	008L	015L	025L	1L	3L	5L	Remarks
A	-	-	-	-	○	○	For relay
P	-	-	-	-	-	-	For power supply
I	-	-	-	-	-	-	For I/O
D	○	-	-	○	○	-	For daisy chain (for RS485 communication)
N	-	-	-	○	○	-	For communication (for RS485 communication)
BA	-	○	○	-	-	-	Main unit/loose wire specifications
BB	-	-	-	-	○	○	Controller/loose wire specifications


EW2KA: For relay


EW2KP: For power supply


EW2KI: For I/O

EW2KD: For daisy chain (for RS485 communication)

EW2KBA: Relay cable (loose wire) for main unit


EW2KN: For communication (for RS485 communication)


EW2KBB: Relay cable (loose wire) for controller

● Communication cable (USB-RS485 converter)

IBM2A - H1 - □

Not specified: With USB cable
N: Without USB cable

● Terminal resistance

(for RS485 communication) EW2FR

(for CC-Link) EW2FC

● Connector for CC-Link

EW2CC

● Branch connector for CC-Link

EW2CY

● Teaching box

EW2TB *See page ㉗ for the specifications.

● DIN rail mounting plate

EW2DP

● Locating dowel pin (x 1)

EW2P - □

Size
3: ϕ3 [0.118] (for EW2□8, EW2□18)
4: ϕ4 [0.157] (for EW2□28)

● Adapter for compliance light (CPLHB) installation

EW2A - H □

Size (gripping force)
8 : 8 N (for CPL□34□)
18 :18 N (for CPL□54□)
28 :28 N (for CPL□70□)

[Included parts]
Locating dowel pin
Mounting bolt

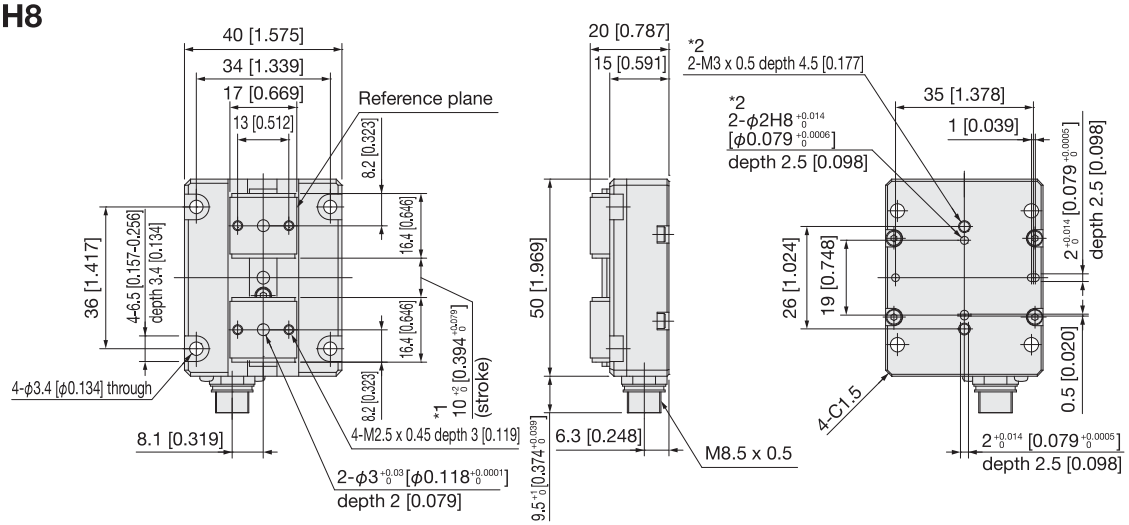
(g[oz.])

Type	EW2A-H8	EW2A-H18	EW2A-H28
Mass	40 [1.411]	76 [2.681]	116 [4.092]

*With included parts

Electric hand dimensions mm [in.]

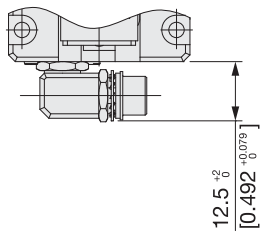
EW2H8

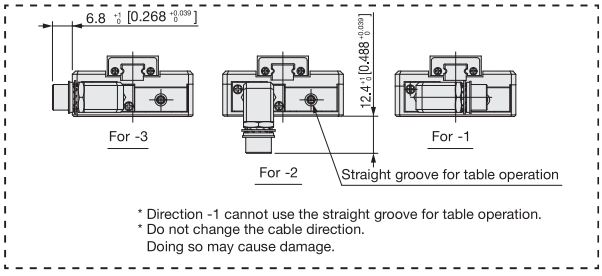


*1 Dimensions of the origin position on the open side. Use the origin shift function when it is necessary to adjust the origin position.

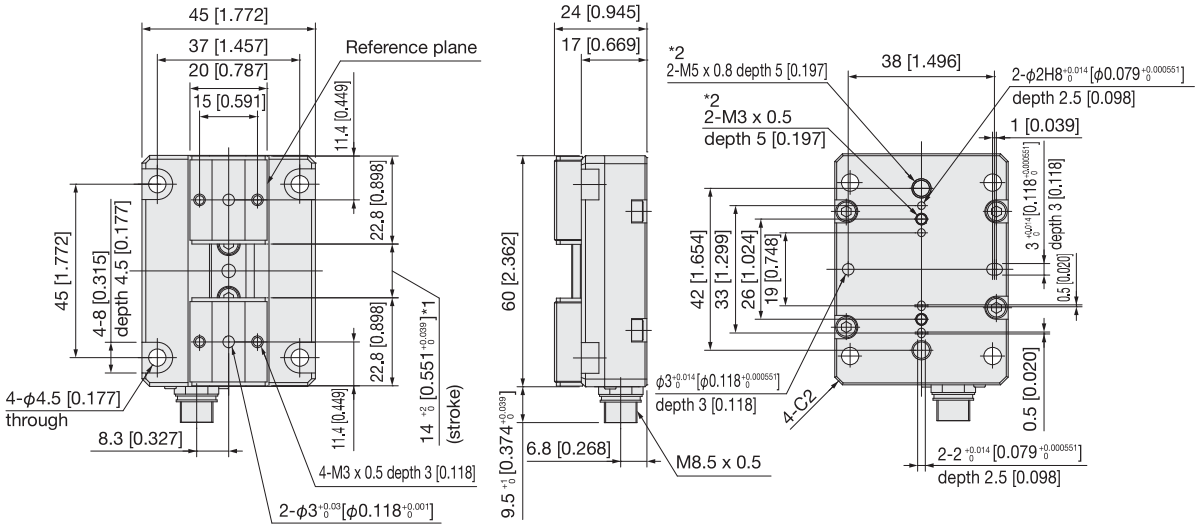
*2 Can be directly mounted to a KOGANEI auto hand changer (MJC3T).

Cable direction: 1, 2, or 3





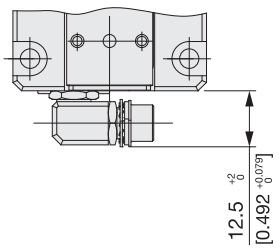
EW2H18

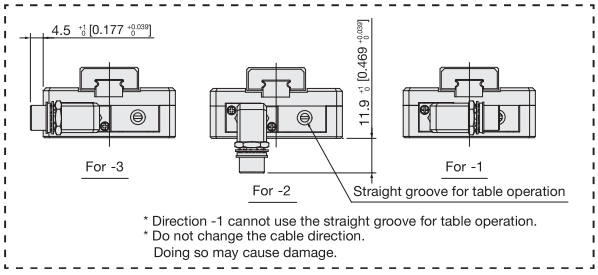


*1 Dimensions of the origin position on the open side. Use the origin shift function when it is necessary to adjust the origin position.

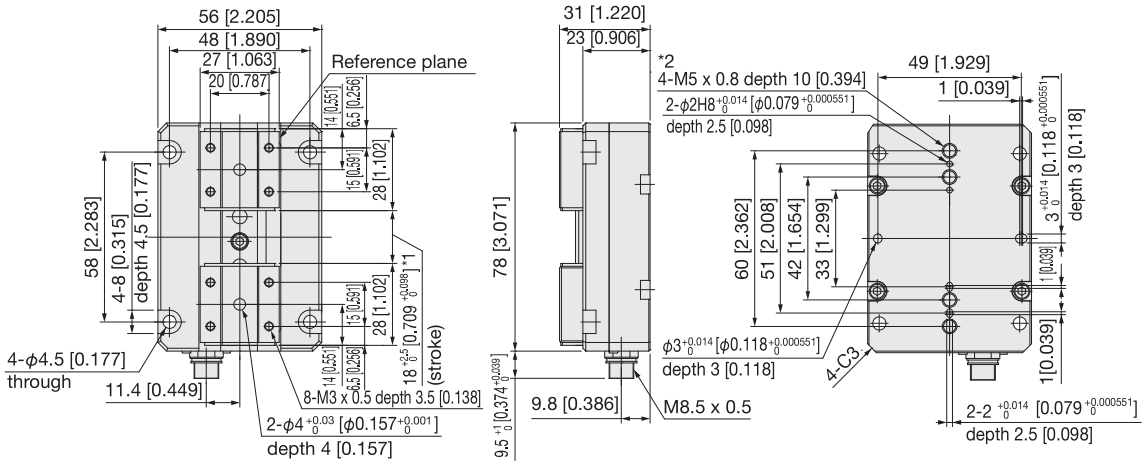
*2 Can be directly mounted to a KOGANEI auto hand changer (MJC3T or MJC10T).

Cable direction: 1, 2, or 3



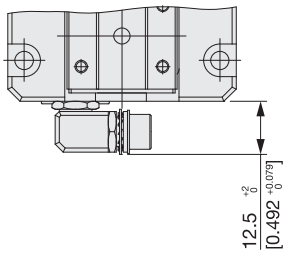


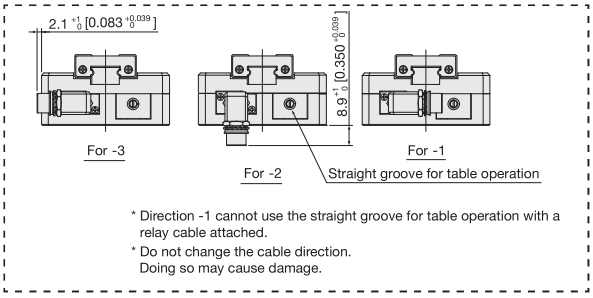
EW2H28



*1 Dimensions of the origin position on the open side. Use the origin shift function when it is necessary to adjust the origin position.
*2 Can be directly mounted to a KOGANEI auto hand changer (MJC10T or MJC20T).

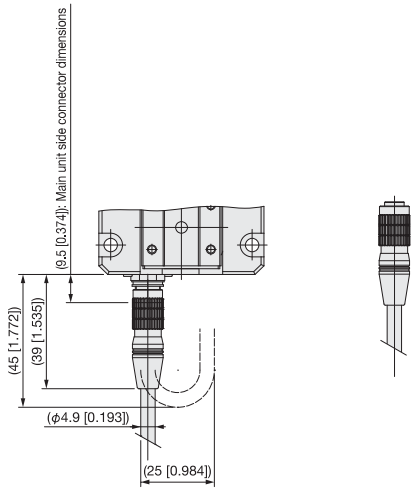
Cable direction: 1, 2, or 3





* Direction -1 cannot use the straight groove for table operation with a relay cable attached.
* Do not change the cable direction. Doing so may cause damage.

● Dimensions with relay cable attached, dimensions with cable bent (reference datum)



*The connector dimensions when a relay cable is attached are also about +30 mm [+1.181 in.] for different cable directions.

Electric hand

Flat type
Long stroke

Specifications

● Main unit basic specifications

Item \ Type			EW2HL8	EW2HL18	EW2HL28
Motor			Brushless motor		
Maximum speed (one side, when using positioning mode)		mm/s [in/sec]	50 [1.969]		
Maximum speed (one side, when using gripping mode)		mm/s [in/sec]	20 [0.787]	30 [1.181]	20 [0.787]
Minimum speed (one side)		mm/s [in/sec]	5 [0.197]		
Maximum gripping force*1		N	8 to 16	18 to 33	28 to 50
Operating temperature range		°C [°F]	0 to 40 [32 to 104]		
Open/closed stroke		mm [in.]	32 [1.260] (16 mm [0.630 in.] on one side)	42 [1.654] (21 mm [0.827 in.] on one side)	52 [2.047] (26 mm [1.024 in.] on one side)
Repeated positioning precision		mm [in.]	±0.05 [±0.002]		
Dynamic allowable moment*2	Mp	N·m [in·lbf]	0.05 [0.4]	0.1 [0.9]	0.3 [2.7]
	My	N·m [in·lbf]	0.03 [0.3]	0.1 [0.9]	0.4 [3.5]
	Mr	N·m [in·lbf]	0.06 [0.5]	0.2 [1.8]	0.8 [7.1]
Maximum payload*3 (one side)		kg [lb]	0.2 (0.1) [0.441 (0.220)]	0.3 (0.15) [0.661 (0.331)]	0.4 (0.2) [0.882 (0.441)]
Mass		kg [lb]	0.14 [0.309]	0.25 [0.551]	0.48 [1.058]
Applicable controllers			**EW2C-H-NP**, **EW2C-H-PN**, **EW2C-H-CC**, **EW2C-H-CCD**		

*1 The maximum gripping force at gripping level 5. For details on the gripping force and gripping speed, see the graph on page ㉚.
*2 The dynamic allowable moment is safety coefficient 10 of the static allowable moment (page ㉙). However, the value is not guaranteed.
*3 Total mass of both side claws mounted to table.

Order Codes

EW2HL □ - □ - □ - □ - □ - □ - □

Elewave electric hand flat type long stroke

Size
8: Gripping force 8 N
18: Gripping force 18 N
28: Gripping force 28 N

Cable direction*1
Not specified: Straight
1: Direction 1 fetching*2
2: Direction 2 fetching
3: Direction 3 fetching

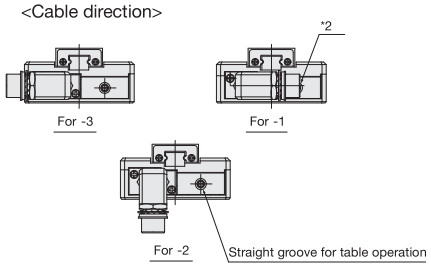
Controller type
Not specified: Without controller
NP: Point input type (NPN specifications)
PN: Point input type (PNP specifications)
CC: CC-Link remote I/O type
CCD: CC-Link remote device type

DIN rail mounting plate
Not specified: Without mounting plate
DP: With mounting plate (cannot be selected without controller)

Locating dowel pin
Not specified: Without locating dowel pin
P: With locating dowel pin (two included)

Cable length (for relay)
Not specified: Without cable
3L: 3 m [9.843 ft.]
5L: 5 m [16.404 ft.]

<Cable direction>



*1 The cable direction cannot be changed after purchase. Select the direction after confirming the state of the settings in advance.
*2 **The EW2HL8 and EW2HL18** cannot use the straight groove for table operation.
The EW2HL28 can only use the straight groove when a relay cable is not attached.

■ Additional Parts

● Controller

Point input type

EW2C - H - □ - □

Controller type
NP : Point input type (NPN specifications)
PN : Point input type (PNP specifications)

DIN rail mounting plate
Not specified: Without mounting plate
DP: With mounting plate

*See pages ⑲ and ⑳ for the controller specifications.

CC-Link type

EW2C - H - □ - □

Controller type
CC: CC-Link remote I/O type
CCD: CC-Link remote device type

DIN rail mounting plate
Not specified: Without mounting plate
DP: With mounting plate

*See pages ㉑ and ㉒ for the controller specifications.

● Accessories: Power cable, I/O cable

Power cable

Cable for I/O

● Accessories: Power cable, terminal resistance, connector for CC-Link

Power cable

Terminal resistance

Connector for CC-Link

Additional parts

● Cable

EW2K □ - □

Length (types P and I cannot be selected)
Not specified: Unspecified
008L: 80 mm [3.150 in.]
015L: 150 mm [5.906 in.]
025L: 250 mm [9.843 in.]
1L: 1 m [3.281 ft.]
3L: 3 m [9.843 ft.]
5L: 5 m [16.404 ft.]

Type
A: For relay
P: For power supply
I : For I/O
D: daisy chain (for RS485 communication)
N: For communication (for RS485 communication)
BA: Relay cable (loose wire) for main unit*
BB: Relay cable (loose wire) for controller*

*For auto hand changer (MJC) wiring
*The robot cable for relay (A, BA, BB).

Combinations of cable types and lengths

Type \ Length	008L	015L	025L	1L	3L	5L	Remarks
A	-	-	-	-	○	○	For relay
P	-	-	-	-	-	-	For power supply
I	-	-	-	-	-	-	For I/O
D	○	-	-	○	○	-	For daisy chain (for RS485 communication)
N	-	-	-	○	○	-	For communication (for RS485 communication)
BA	-	○	○	-	-	-	Main unit/loose wire specifications
BB	-	-	-	-	○	○	Controller/loose wire specifications

EW2KA: For relay

EW2KP: For power supply

EW2KI: For I/O

EW2KD: For daisy chain (for RS485 communication)

EW2KBA: Relay cable (loose wire) for main unit

EW2KN: For communication (for RS485 communication)

EW2KBB: Relay cable (loose wire) for controller

● Communication cable (USB-RS485 converter)

IBM2A - H1 - □

Not specified: With USB cable
N: Without USB cable

● Terminal resistance

(for RS485 communication)
EW2FR

(for CC-Link)
EW2FC

● Connector for CC-Link

EW2CC

● Branch connector for CC-Link

EW2CY

● Teaching box

EW2TB *See page ㉗ for the specifications.

● DIN rail mounting plate

EW2DP

● Adapter for compliance light (CPLHB) installation

EW2A - H □

Size (gripping force)
8 : 8 N (for CPL□34□)
18 :18 N (for CPL□54□)
28 :28 N (for CPL□70□)

[Included parts]
Locating dowel pin
Mounting bolt

(g [oz.])

Type	EW2A-H8	EW2A-H18	EW2A-H28
Mass	40 [1.411]	76 [2.681]	116 [4.092]

*With included parts

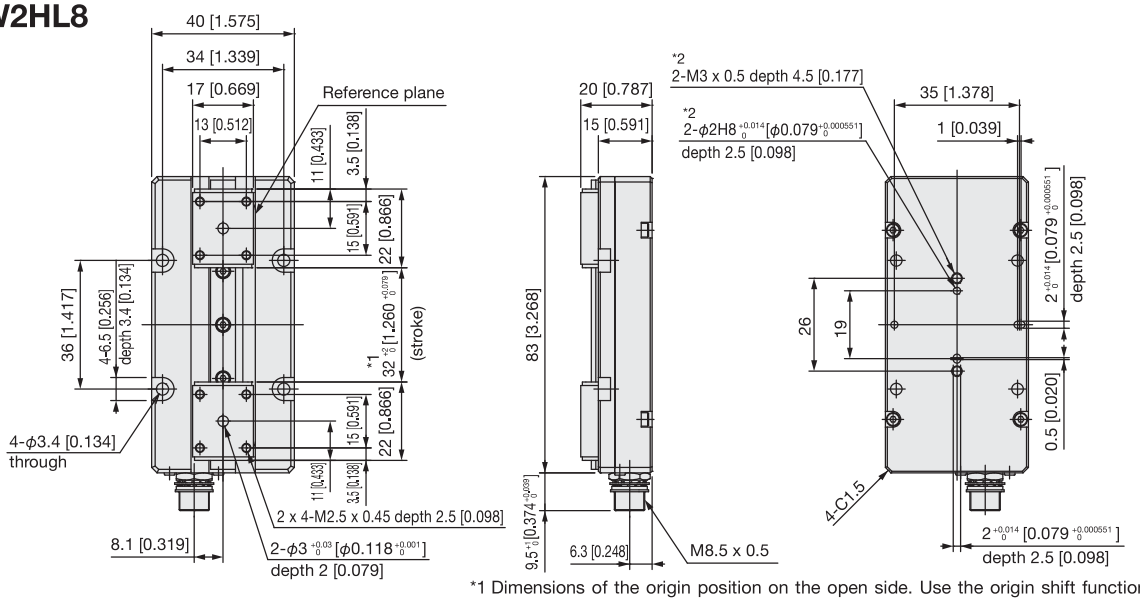
● Locating dowel pin (x 1)

EW2P - □

Size
3: ϕ3 [0.118] (for EW2□8, EW2□18)
4: ϕ4 [0.157] (for EW2□28)

Electric hand dimensions mm [in.]

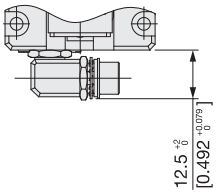
EW2HL8

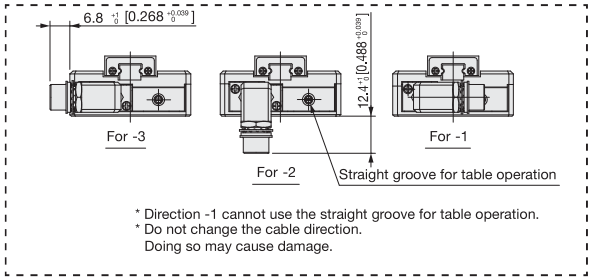


*1 Dimensions of the origin position on the open side. Use the origin shift function when it is necessary to adjust the origin position.

*2 Can be directly mounted to a KOGANEI auto hand changer (MJC3T).

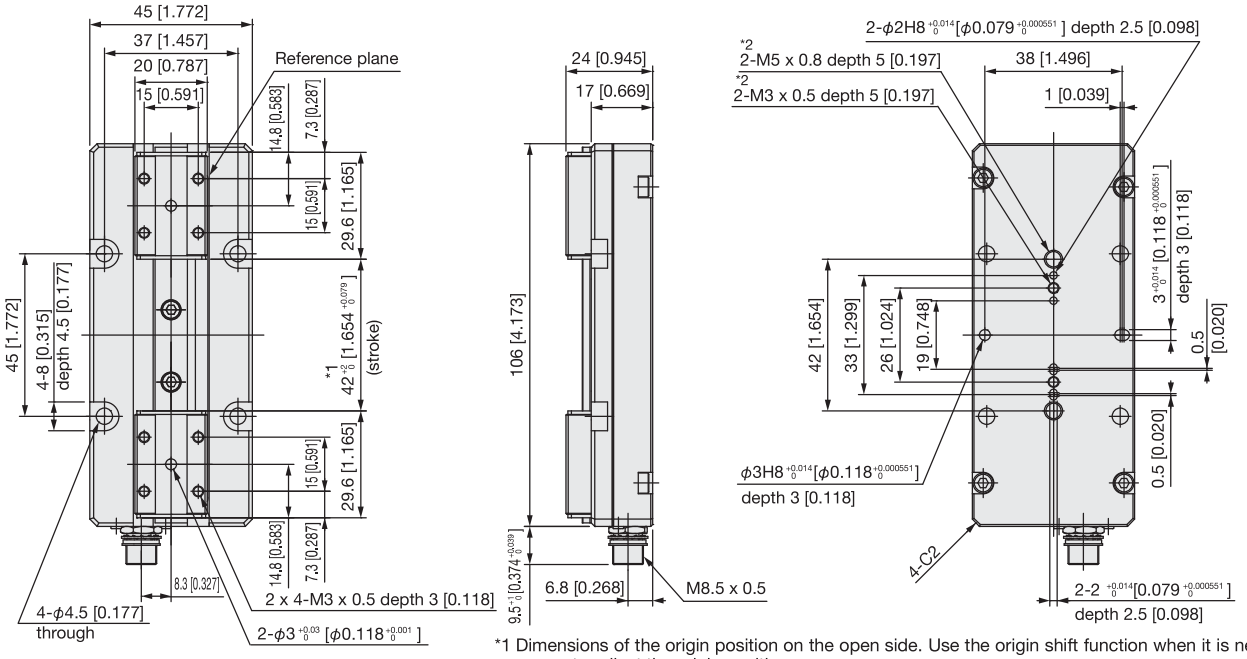
Cable direction: 1, 2, or 3





* Direction -1 cannot use the straight groove for table operation.
* Do not change the cable direction.
  Doing so may cause damage.

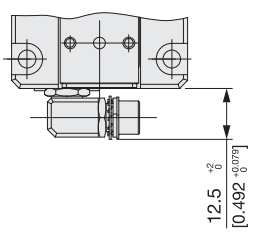
EW2HL18

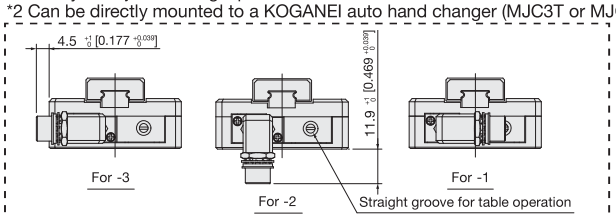


*1 Dimensions of the origin position on the open side. Use the origin shift function when it is necessary to adjust the origin position.

*2 Can be directly mounted to a KOGANEI auto hand changer (MJC3T or MJC10T).

Cable direction: 1, 2, or 3

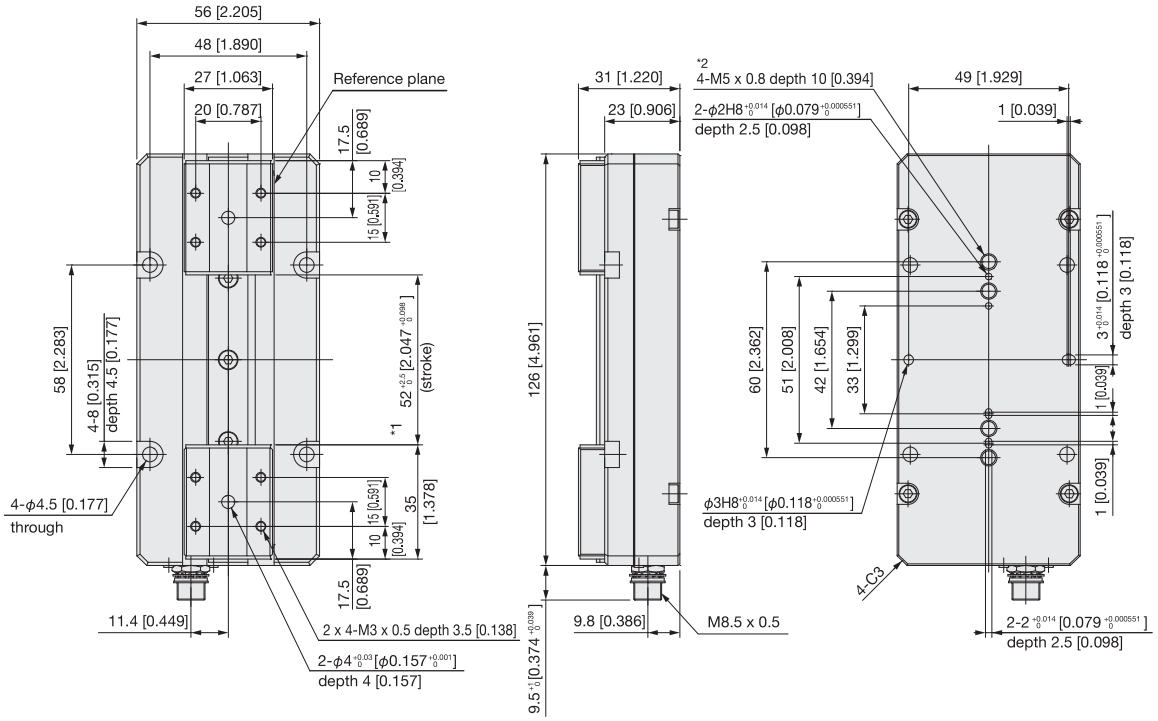




* Direction -1 cannot use the straight groove for table operation.
* Do not change the cable direction.
  Doing so may cause damage.

Electric hand dimensions mm [in.]

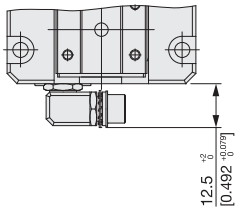
EW2HL28

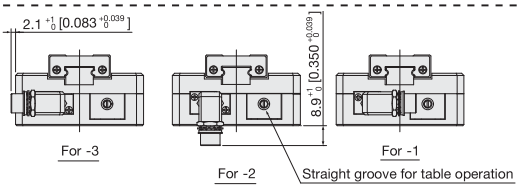


*1 Dimensions of the origin position on the open side. Use the origin shift function when it is necessary to adjust the origin position.

*2 Can be directly mounted to a KOGANEI auto hand changer (MJC10T or MJC20T).

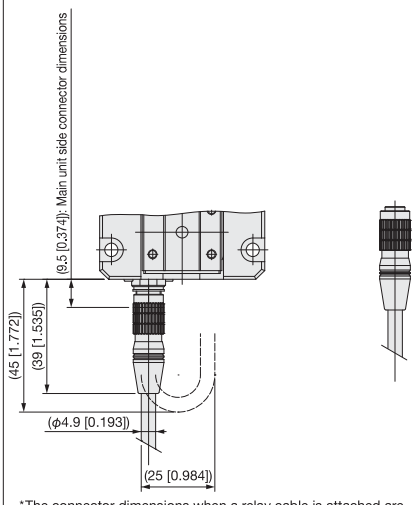
Cable direction: 1, 2, or 3





* Direction -1 cannot use the straight groove for table operation with a relay cable attached.
* Do not change the cable direction. Doing so may cause damage.

● Dimensions with relay cable attached, dimensions with cable bent (reference datum)



*The connector dimensions when a relay cable is attached are also about +30 mm [+1.181 in.] for different cable directions.

Controller

Point input type
NPN Specifications

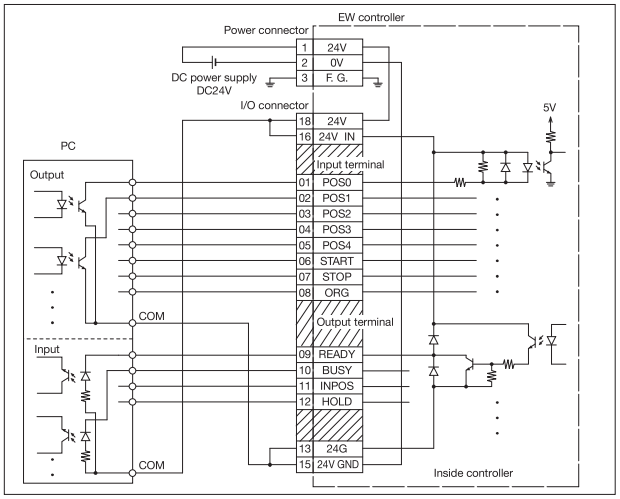
Specifications

Item	Type	EW2C-H-NP
Control specifications	Motor drive system	Square wave drive
	Control method	Closed loop control*1
	Operating method	PTP, force control
	Origin detection method	Stroke end detection
	Position detection method	Hall IC output
	Minimum setting distance	0.05 mm [0.002 in.]
	Point setting	32 points
	Point input method	Numeric input, teaching input, direct teaching
	Point setting input	5 points (POS0～POS4)
	Control input	3 points (ORG, START, STOP)
	Control output	4 points (READY, BUSY, HOLD, INPOS)
	Error detection output	Time over, wiring disconnection, data error, system error
	Motor drive cable	Motor drive output, Hall IC input dedicated cable (F.G, shielded)
	Hall IC cable	
RS485 Communication method	External communication	RS485 1 ch (computer, TB communication) Daisy chain available (maximum 16 connections)
	Communication method	Half duplex
	Synchronous method	Start-stop synchronization
	Communication speed	115.2 kbps
	Parity bit	Odd
	Communication distance	Total cable length 100 m [328.084 ft.] or less
	Communication cable	Dedicated cable (two pair twisted shielded cable)
General specifications	Mass	0.2 kg [0.441 lb]
	Power supply	DC 24 V±10 % 1.6 A Max (common power supply with RS485 communication)
	Power supply indication	PWR
	Operating temperature range	0 to 40 °C [32 to 104°F]
	Operating humidity range	35 to 85 % RH (without condensation)
	Storage temperature range	-10 to 65 °C [14 to 149°F]
	Backup	Setting conditions retained in EEPROM
	Noise resistance	IEC61000-4-4 level 3
	Accessories	I/O cable, power cable

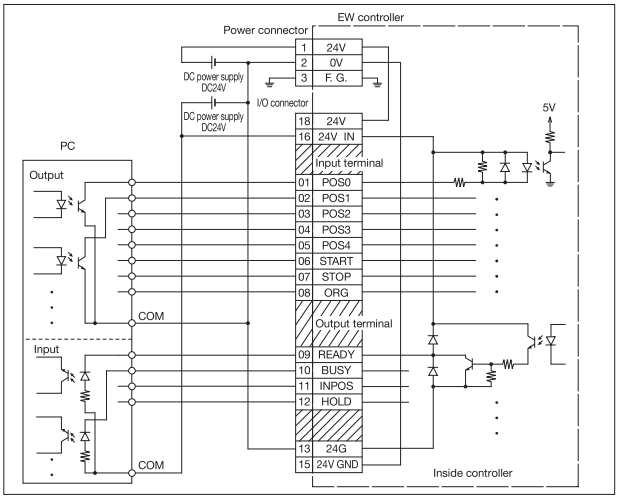
*1 Missed step detection is performed with a Hall IC.

Controller Wiring Method

1. When using the internal power supply of the controller



2. When not using the internal power supply of the controller



Controller

Point input type
PNP Specifications

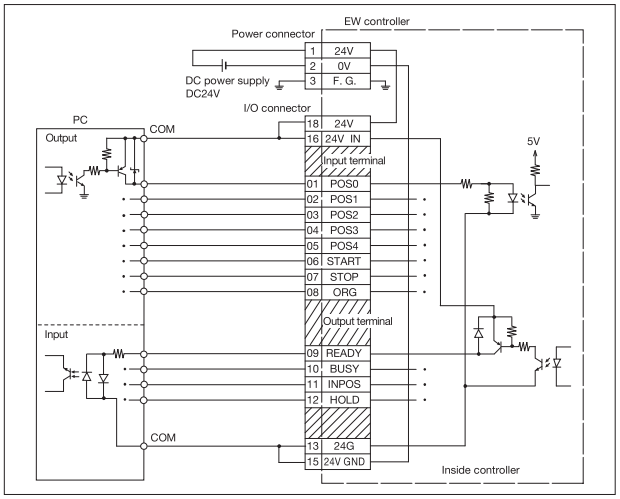
Specifications

Item	Type	EW2C-H-PN
Control specifications	Motor drive system	Square wave drive
	Control method	Closed loop control*1
	Operating method	PTP, force control
	Origin detection method	Stroke end detection
	Position detection method	Hall IC output
	Minimum setting distance	0.05 mm [0.002 in.]
	Point setting	32 points
	Point input method	Numeric input, teaching input, direct teaching
	Point setting input	5 points (POS0～POS4)
	Control input	3 points (ORG, START, STOP)
	Control output	4 points (READY, BUSY, HOLD, INPOS)
	Error detection output	Time over, wiring disconnection, data error, system error
	Motor drive cable	Motor drive output, Hall IC input dedicated cable (F.G, shielded)
	Hall IC cable	
RS485 Communication method	External communication	RS485 1 ch (computer, TB communication) Daisy chain available (maximum 16 connections)
	Communication method	Half duplex
	Synchronous method	Start-stop synchronization
	Communication speed	115.2 kbps
	Parity bit	Odd
	Communication distance	Total cable length 100 m [328.084 ft.] or less
	Communication cable	Dedicated cable (two pair twisted shielded cable)
General specifications	Mass	0.2 kg [0.441 lb]
	Power supply	DC 24 V±10 % 1.6 A Max (common power supply with RS485 communication)
	Power supply indication	PWR
	Operating temperature range	0 to 40 °C [32 to 104°F]
	Operating humidity range	35 to 85 % RH (without condensation)
	Storage temperature range	-10 to 65 °C [14 to 149°F]
	Backup	Setting conditions retained in EEPROM
	Noise resistance	IEC61000-4-4 level 3
	Accessories	I/O cable, power cable

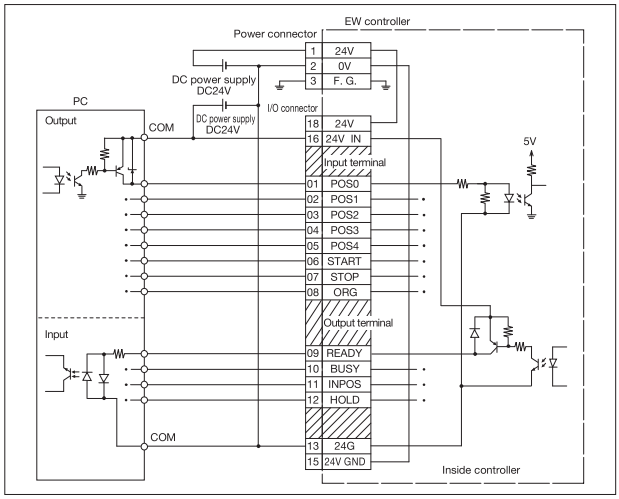
*1 Missed step detection is performed with a Hall IC.

Controller Wiring Method

1. When using the internal power supply of the controller



2. When not using the internal power supply of the controller



Controller

CC-Link Remote I/O Type

Specifications

Item \ Type		EW2C-H-CC
Control specifications	Motor drive system	Square wave drive
	Control method	Closed loop control*1
	Operating method	PTP, force control
	Origin detection method	Stroke end detection
	Position detection method	Hall IC output
	Minimum setting distance	0.05 mm [0.002 in.]
	Point setting	32 points
	Point input method	Numeric input, teaching input, direct teaching
	Point setting input	5 points (POS0～POS4)
	Control input	3 points (ORG, START, STOP)
	Control output	4 points (READY, BUSY, HOLD, INPOS)
	Error detection output	Time over, wiring disconnection, data error, system error
	Motor drive cable	Motor drive output, Hall IC input dedicated cable (F.G, shielded)
	Hall IC cable	
RS485 Communication method	External communication	RS485 1 ch (computer, TB communication) Daisy chain available (maximum 16 connections)
	Communication method	Half duplex
	Synchronous method	Start-stop synchronization
	Communication speed	115.2 kbps
	Parity bit	Odd
	Communication distance	Total cable length 100 m [328.084 ft.] or less
	Communication cable	Dedicated cable (two pair twisted shielded cable)
General specifications	Mass	0.2 kg [0.441 lb]
	Power supply	DC 24 V±10 % 1.6 A Max (common power supply with RS485 communication and CC-Link communication)
	Power supply indication	PWR
	Operating temperature range	0 to 40 °C [32 to 104°F]
	Operating humidity range	35 to 85 % RH (without condensation)
	Storage temperature range	-10 to 65 °C [14 to 149°F]
	Backup	Setting conditions retained in EEPROM
	Noise resistance	IEC61000-4-4 level 3
	Accessories	CC-Link connector, power cable, CC-Link terminal resistance
CC-Link Communication specifications	Version	Ver.1.10
	Communication method	Broadcast polling method
	Synchronous method	Frame synchronization method
	Transmission line method	Bus format (EIA RS485 compliant)
	Communication speed	Switch between 156 k/625 k/2.5 M/5 M/10 Mbps (rotary switch)
	Occupied station count	One remote I/O station
	Maximum connected device count	64 devices
	Station number setting	Switch from 1 to 64 (rotary switch)
	CLEAR/HOLD	Switch (DIP switch) CLEAR: When a CC-Link communication error occurs, data other than the controller connection are cleared HOLD: When a CC-Link communication error occurs, the state before the error occurred is retained
	Indication	PW, L RUN, SD, RD, L ERR (red LED)
	Transmission distance	Communication speed (bps): 156 k / 625 k / 2.5 M / 5 M / 10 M Total cable length (m [ft.]): 1200 [3,937.008] / 900 [2,952.756] / 400 [1,312.336] / 160 [524.934] / 100 [328.084]
	Communication cable	Dedicated CC-Link cable supporting Ver.1.10
	Terminal resistance	110 Ω (when using dedicated CC-Link cable supporting Ver.1.10)

*1 Missed step detection is performed with a Hall IC.

Controller

CC-Link remote device type

Specifications

Item \ Type		EW2C-H-CCD					
Control specifications	Motor drive system	Square wave drive					
	Control method	Closed loop control*1					
	Operating method	PTP, force control					
	Origin detection method	Stroke end detection					
	Position detection method	Hall IC output					
	Minimum setting distance	0.05 mm [0.002 in.]					
	Point setting	32 points					
	Point input method	Numeric input, teaching input, direct teaching					
	Point setting input	5 points (POS0～POS4)					
	Error detection output	Time over, wiring disconnection, data error, system error					
	Motor drive cable	Motor drive output, Hall IC input dedicated cable (F.G, shielded)					
	Hall IC cable						
RS485 Communication method	External communication	RS485 1 ch (computer, TB communication) Daisy chain available (maximum 16 connections)					
	Communication method	Half duplex					
	Synchronous method	Start-stop synchronization					
	Communication speed	115.2 kbps					
	Parity bit	Odd					
	Communication distance	Total cable length 100 m [328.084 ft.] or less					
	Communication cable	Dedicated cable (two pair twisted shielded cable)					
General specifications	Mass	0.2 kg [0.441 lb]					
	Power supply	DC 24 V±10 % 1.6 A Max (common power supply with RS485 communication and CC-Link communication)					
	Power supply indication	PWR					
	Operating temperature range	0 to 40 °C [32 to 104°F]					
	Operating humidity range	35 to 85 % RH (without condensation)					
	Storage temperature range	-10 to 65 °C [14 to 149°F]					
	Backup	Setting conditions retained in FRAM					
	Noise resistance	IEC61000-4-4 level 3					
	Accessories	CC-Link connector, power cable, CC-Link terminal resistance					
CC-Link Communication specifications	Version	Ver.1.10					
	Communication method	Broadcast polling method					
	Synchronous method	Frame synchronization method					
	Transmission line method	Bus format (EIA RS485 compliant)					
	Communication speed	Switch between 156 k/625 k/2.5 M/5 M/10 Mbps (rotary switch)					
	Occupied station count	1/2/4 remote device stations (parameter switch)					
	Maximum connected device count	1 station occupied: 42 devices; 2 stations occupied: 32 devices; 4 stations occupied: 16 devices					
	Station number setting	Switch (rotary switch) 1 station occupied: 1 to 64; 2 stations occupied: 1 to 63; 4 stations occupied: 1 to 61					
	CLEAR/HOLD	Switch (DIP switch) CLEAR: When a CC-Link communication error occurs, data other than the controller connection are cleared HOLD: When a CC-Link communication error occurs, the state before the error occurred is retained					
	Indication	PW, L RUN, SD, RD, L ERR (blue LED)					
	Transmission distance	Communication speed (bps)	156 k	625 k	2.5 M	5 M	10 M
		Total cable length (m [ft.])	1200 [3,937.008]	900 [2,952.756]	400 [1,312.336]	160 [524.934]	100 [328.084]
	Communication cable	Dedicated CC-Link cable supporting Ver.1.10					
	Terminal resistance	110 Ω (when using dedicated CC-Link cable supporting Ver1.10)					

*1 Missed step detection is performed with a Hall IC.

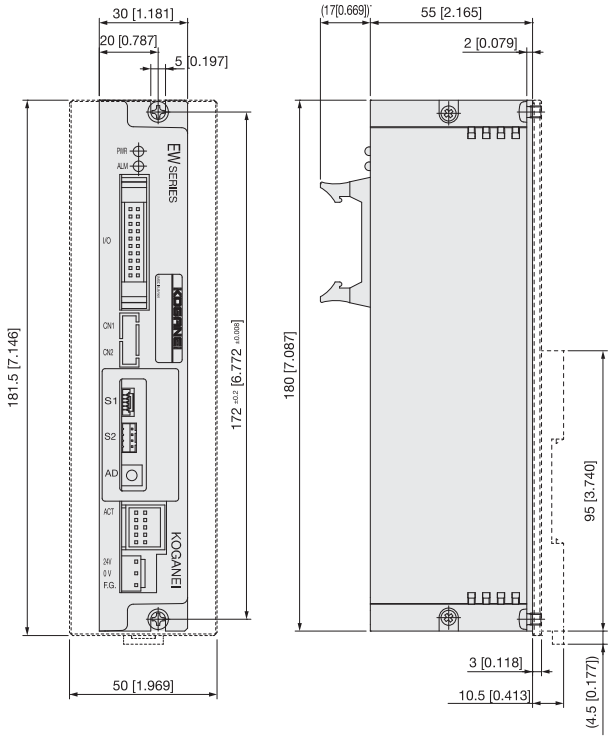
Dimensions mm [in.]

● Controller

Point input type

EW2C-H- □ **-** □ — **DIN rail mounting plate**
Not specified : Without mounting plate
DP: With mounting plate

Controller type
NP : Point input type (NPN specifications)
PN : Point input type (PNP specifications)

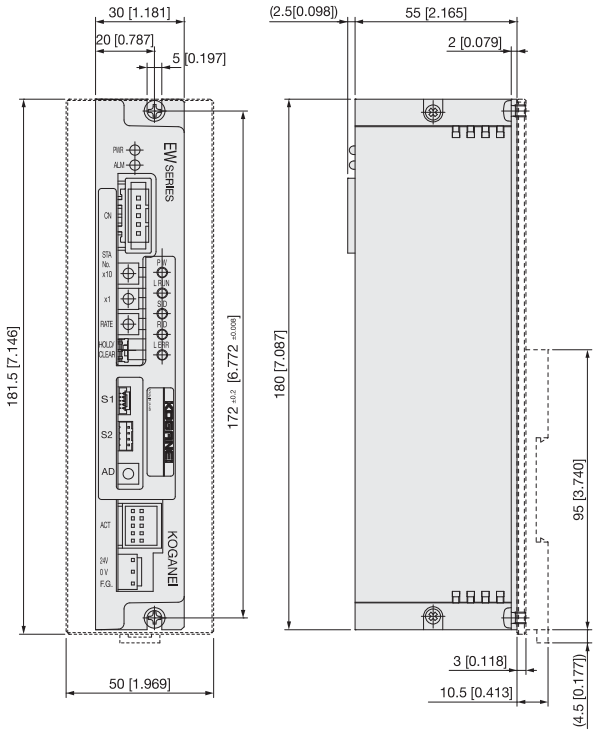


*The dotted line indicates the DIN rail mounting plate dimensions

CC-Link type

EW2C-H- □ **-** □ — **DIN rail mounting plate**
Not specified : Without mounting plate
DP: With mounting plate

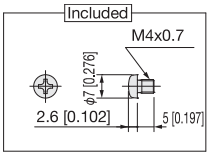
Controller type
CC: CC-Link remote I/O type
CCD: CC-Link remote device type

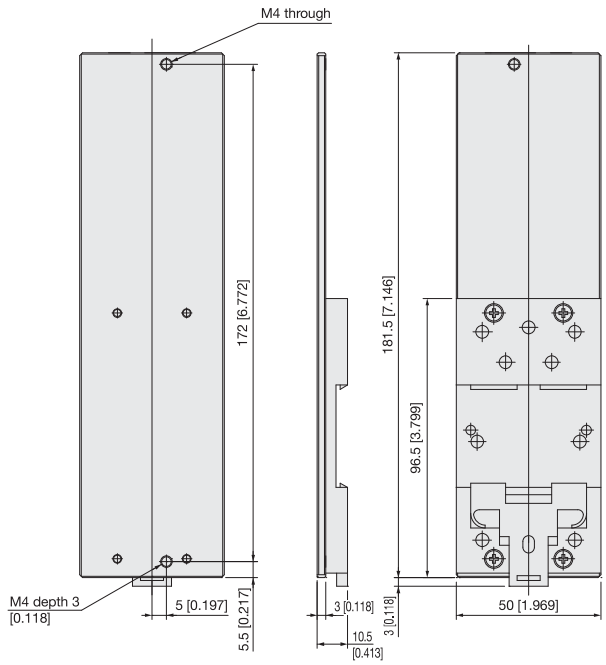


*The dotted line indicates the DIN rail mounting plate dimensions

● DIN rail mounting plate

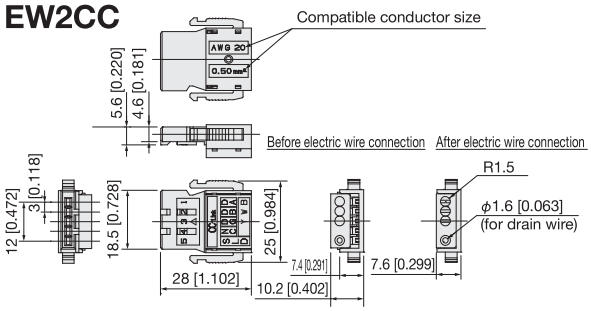
EW2DP





● Connector for CC-Link

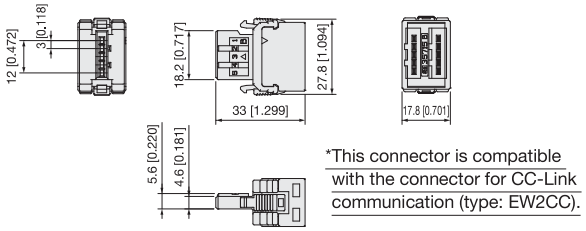
EW2CC



*This connector is compatible with the cable for CC-Link communication.

● Branch connector for CC-Link

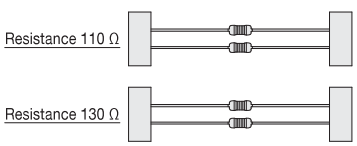
EW2CY



*This connector is compatible with the connector for CC-Link communication (type: EW2CC).

● Terminal resistance (for CC-Link)

EW2FC



Dimensions mm [in.]

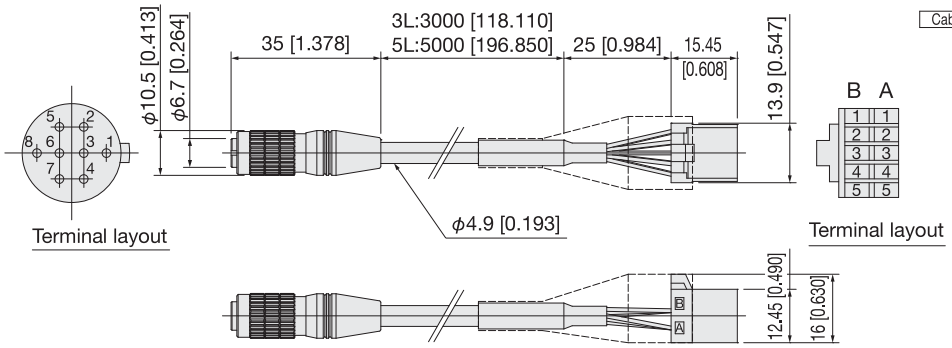
● Cable (robot cable)

・For relay

EW2KA- □
- **3L**: 3 m [9.843 ft.]
- **5L**: 5 m [16.404 ft.]

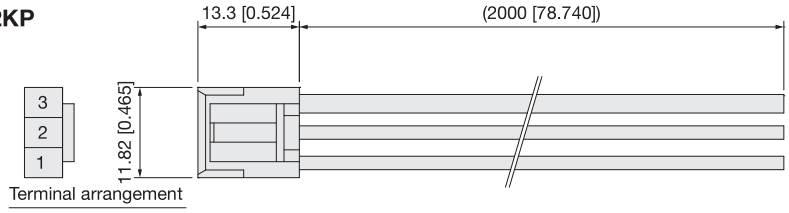
Main unit side connector / Controller side connector

NO.	Parts	Color	NO.	Parts	Color
1	U	Green	A1	U	Green
2	V	Brown	B1	V	Brown
3	W	Yellow	A2	W	Yellow
4	Vcc	Orange	B2	FG	White
5	HU	White	A3	Vcc	Orange
6	HV	Red	B3	GND	Blue
7	HW	Black	A4	HU	White
8	GND	Blue	B4	HV	Red
Cable shield			A5	HW	Black
			B5	N.C.	-



・For power supply

EW2KP

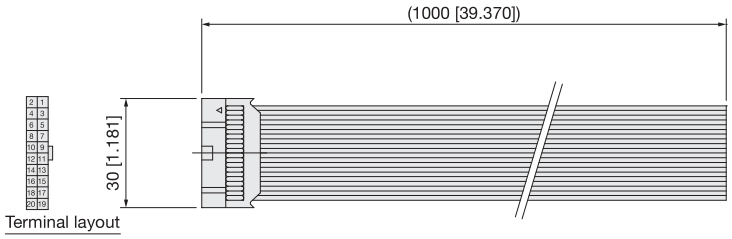


Power supply connector terminal arrangement

NO.	Parts	Color
1	24V	Red
2	GND	Blue
3	F.G.	Green

・For I/O

EW2KI



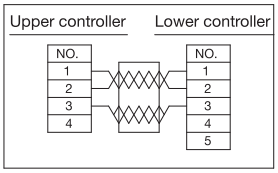
I/O connector terminal arrangement

NO.	Parts	Color
1	POS0	Brown
2	POS1	Red
3	POS2	Orange
4	POS3	Yellow
5	POS4	Green
6	START	Blue
7	STOP	Purple
8	ORG	Gray
9	RDY	White
10	BUSY	Black
11	INPOS	Brown
12	HOLD	Red
13	24G IN	Orange
14	N.C.	Yellow
15	24G	Green
16	24V IN	Blue
17	N.C.	Purple
18	24V	Gray
19	F.G.	White
20	F.G.	Black

・For daisy chain (for RS485 communication)

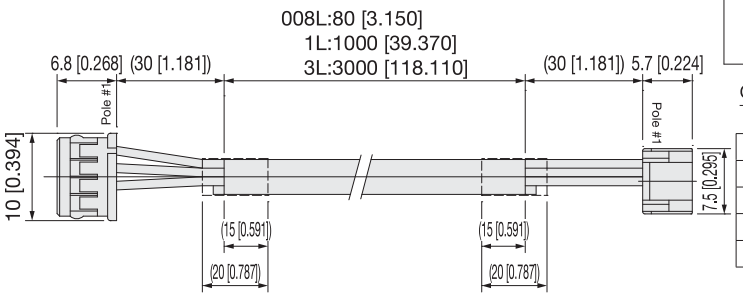
EW2KD - □
- **008L**: 80 mm [3.150 in.]
- **1L**: 1 m [3.281 ft.]
- **3L**: 3 m [9.843 ft.]

Cable wire chart



Connector terminal arrangement (Upper controller)

NO.	Parts	Color
1	A	Brown
2	B	Blue
3	GND	Black
4		



Connector terminal arrangement (Lower controller)

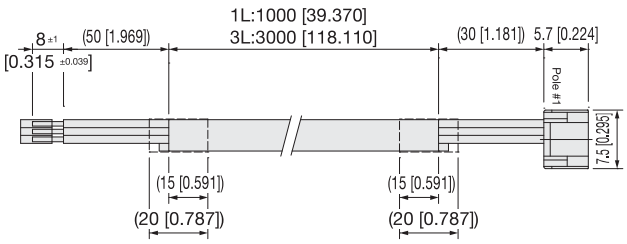
NO.	Parts	Color
1	A	Brown
2	B	Blue
3	GND	Black
4		
5		

Dimensions mm [in.]

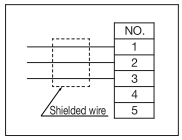
· For communication (for RS485 communication)

EW2KN - □

1L: 1 m [3.281 ft.]
3L: 3 m [9.843 ft.]



Cable wire chart



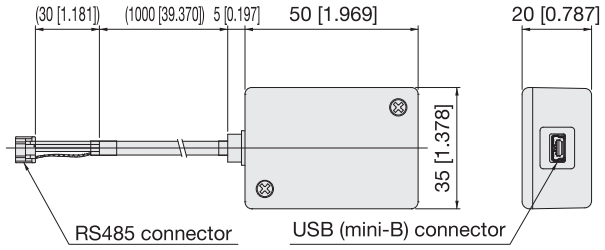
Connector terminal arrangement
(Lower controller)

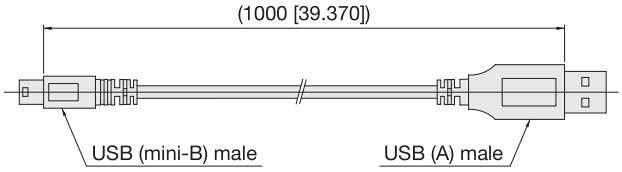
	NO.	Parts	Color
1	1	A	White
2	2	B	Pink
3	3	GND	Yellow
4	4		
5	5		

· USB-RS485 converter for communication

IBM2A - H1 - □

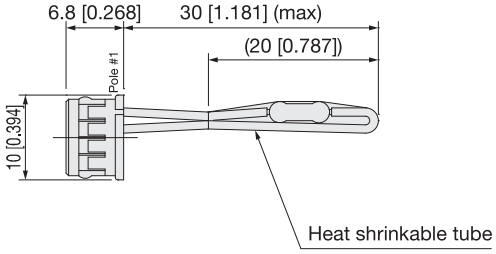
Not specified: With USB cable
N: Without USB cable





● Terminal resistance (for RS485 communication)

EW2FR



· Relay cable (loose wire) for main unit* (robot cable)

EW2KBA- □

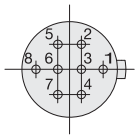
015L: 150 mm [5.906 in.]
025L: 250 mm [9.843 in.]

Main unit side connector

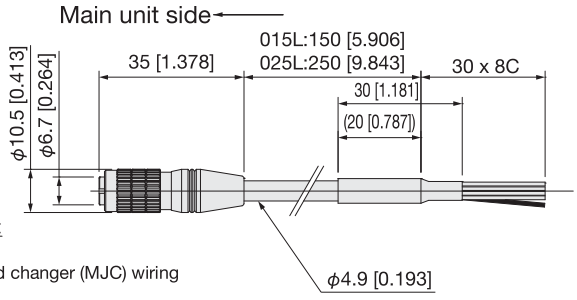
NO.	Parts	Color
1	U	Green
2	V	Brown
3	W	Yellow
4	Vcc	Orange
5	HU	White
6	HV	Red
7	HW	Black
8	GND	Blue

Cable shield

Cable wire chart



Terminal layout



*For auto hand changer (MJC) wiring

· Relay cable (loose wire) for controller* (robot cable)

EW2KBB- □

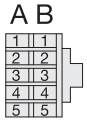
3L: 3 m [9.843 ft.]
5L: 5 m [16.404 ft.]

Controller side connector

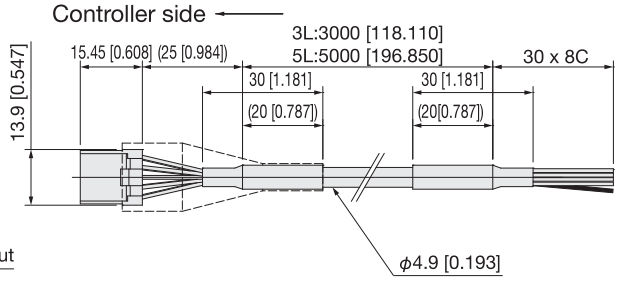
NO.	Parts	Color
A1	U	Green
B1	V	Brown
A2	W	Yellow
B2	FG	Shield
A3	Vcc	Orange
B3	GND	Blue
A4	HU	White
B4	HV	Red
A5	HW	Black
B5	N.C.	-

Cable shield

Cable wire chart



Terminal layout



*For auto hand changer (MJC) wiring

Dimensions mm [in.]

· Locating dowel pin

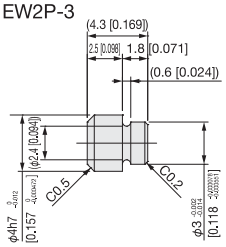
EW2P - □

Size

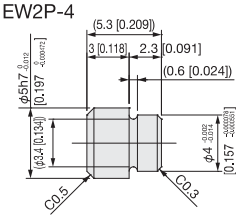
3: ϕ3 [0.118] (for EW2□8, EW2□18)

4: ϕ4 [0.157] (for EW2□28)

EW2P-3



EW2P-4



· Adapter for compliance light installation

EW2A-H □

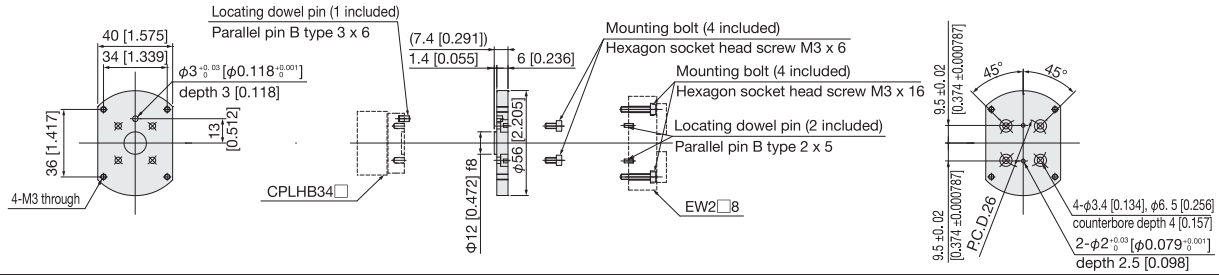
Size (gripping force)

8 : 8 N (for CPL□34□)

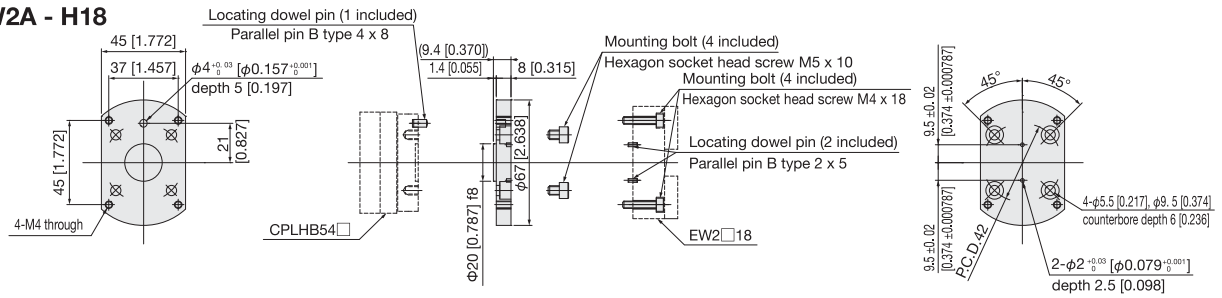
18 :18 N (for CPL□54□)

28 :28 N (for CPL□70□)

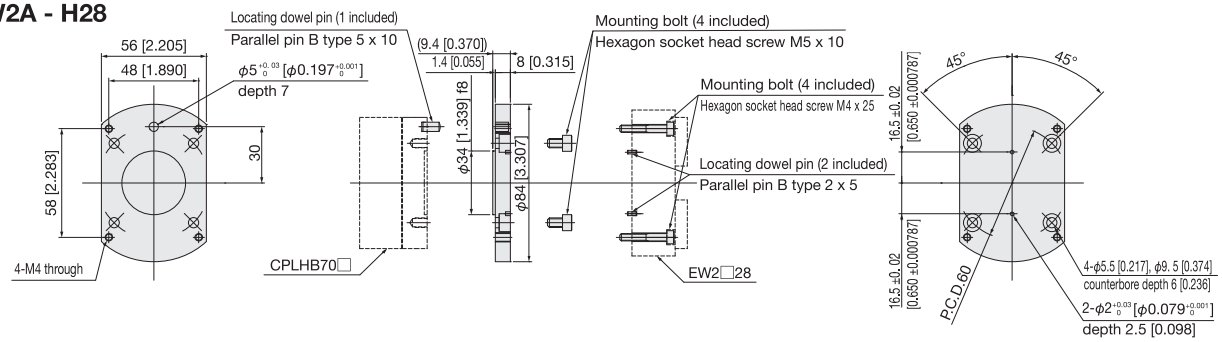
EW2A - H8



EW2A - H18



EW2A - H28



● Maximum tightening torque (when mounting workpiece)

Bolt used	Maximum tightening torque (N·m [in·lbf])
M3 x 0.5	0.63 [5.58]
M4 x 0.5	1.5 [13.28]
M5 x 0.8	3 [26.55]

● Mass (adapter for compliance light installation)

(g [oz.])

Type	EW2A-H8	EW2A-H18	EW2A-H28
Mass*	40 [1.411]	76 [2.681]	116 [4.092]

*With included parts.

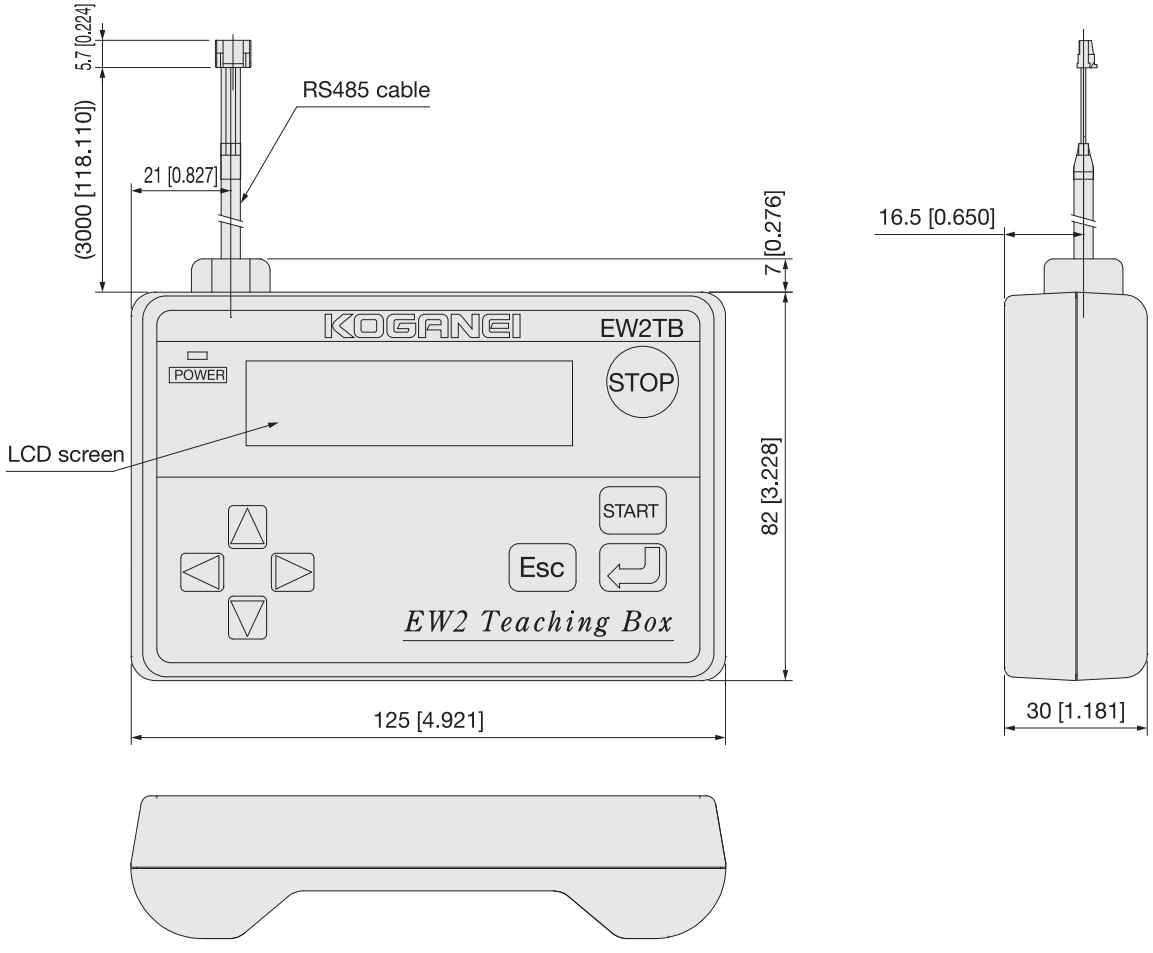
Teaching Box

EW2TB

Specifications

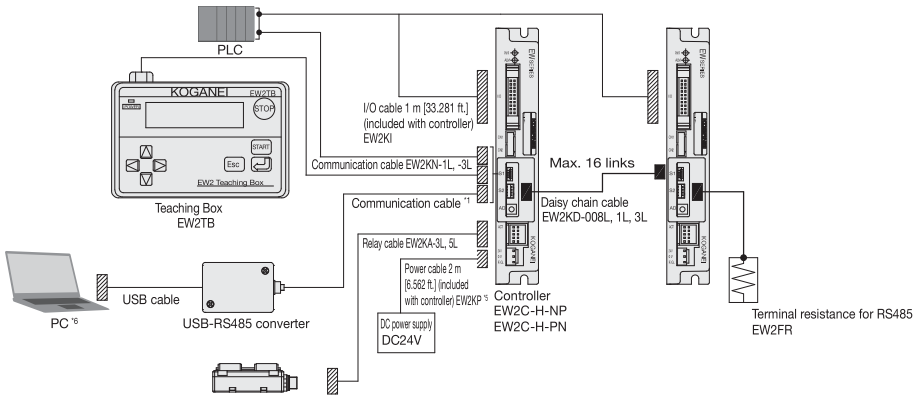
Item	Type	EW2TB
Power supply	Power supply voltage	DC 24 V (supplied from controller)
	Consumption current	50mA MAX.
Indication	Setting display	LCD 16 characters x 2 lines
	Power supply indication	LED lit when power turned ON (internal 5 V)
General	Setting method	Key operation: 8 buttons
	Communication method	RS485 (serial communication)
	Cable length	3 m [9.843 ft.]
	Mass	Main unit: 200 g [7.055 oz.]
	Operating temperature	0 to 40 °C [32 to 104°F]
	Operating humidity	35 to 80 % RH (without condensation)
	Storage temperature	-10 to 65 °C [14 to 149°F]

Teaching box dimensions mm [in.]

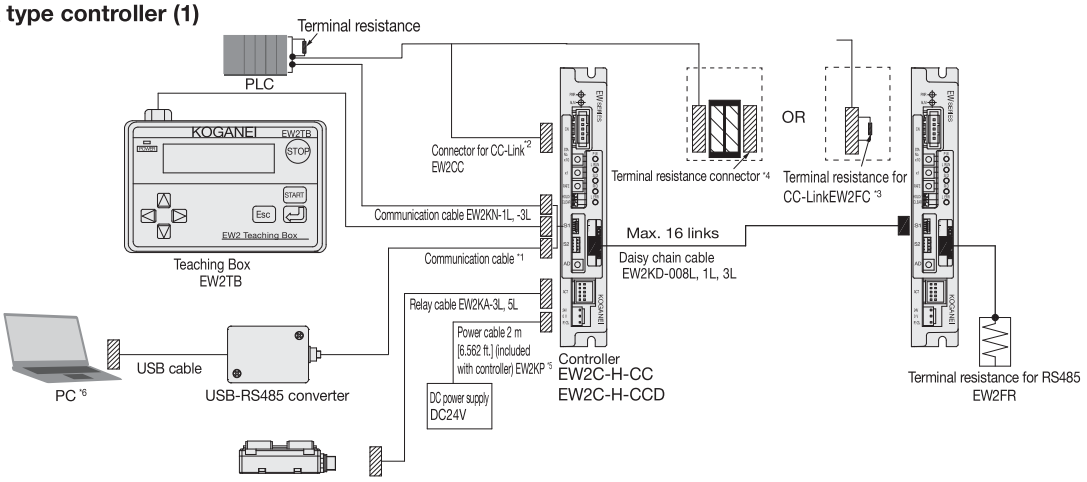


● System configuration of electric hand flat type (example)

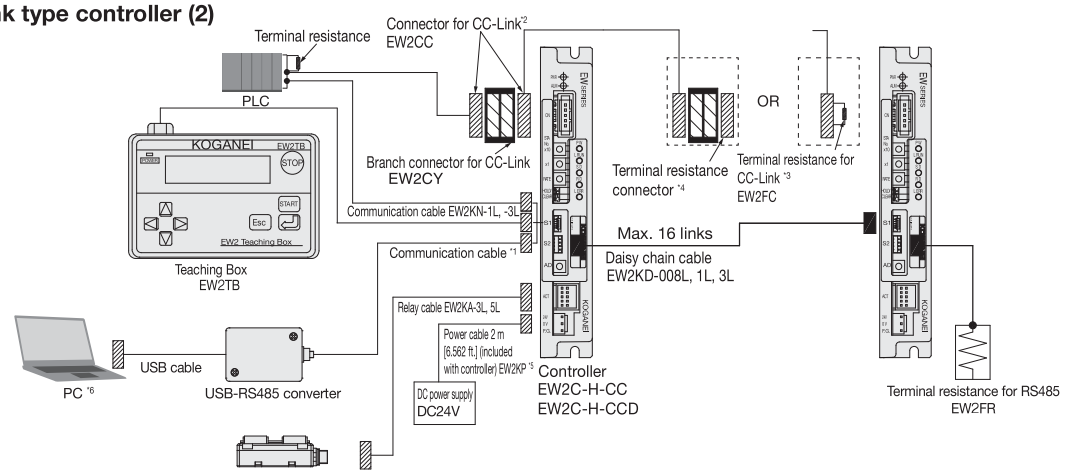
● Point input type controller



● CC-Link type controller (1)



● CC-Link type controller (2)



*1 One of the following communication cables can be selected.
· IBM2A-H1: USB-RS485 converter, with USB cable
· IBM2A-H1-N: USB-RS485 converter, without USB cable
· EW2KN: For communication

*2 Only the connector for CC-Link is provided. The cable must be provided by the customer. (Dedicated CC-Link cable supporting Ver1.1)

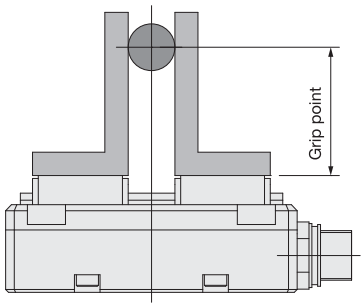
*3 When the EW2C-H-CC □ will be the end unit, make sure to use the terminal resistance for CC-Link (EW2FC) or terminal resistance connector.

*4 The terminal resistance connector must be provided by the customer.
[Recommended] 35T05-6M00-B0M GF from 3M

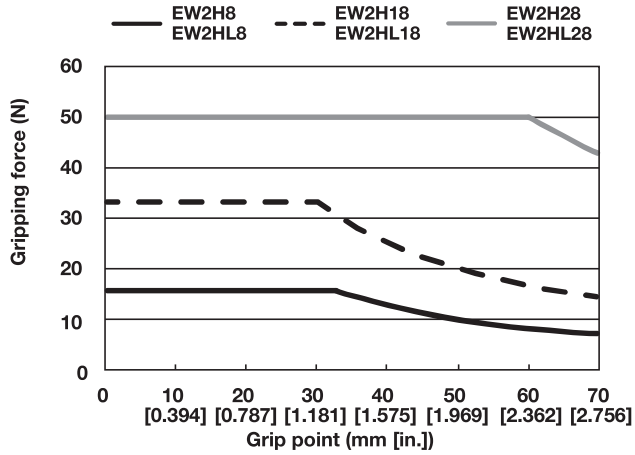
*5 The installation of a noise filter is recommended.
(see page ⑩)

*6 The support software for setting the controller can be downloaded from the KOGANEI website free of charge.

● Grip point gripping force limitation

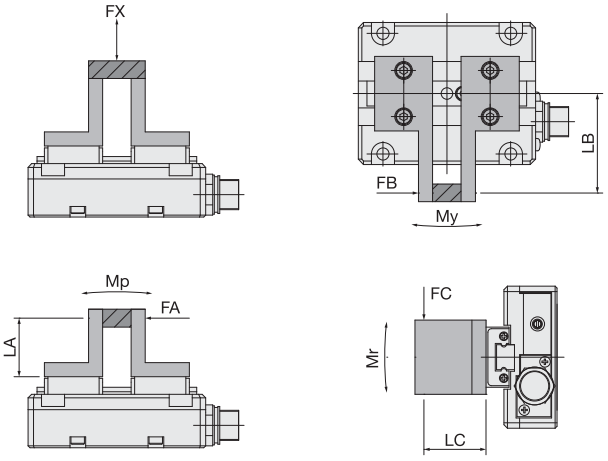


● Grip point and gripping force graph



*Indicates the grip point of the maximum gripping force for each size.
Set a grip point at or below the allowable moment (Mp).

● Allowable load and static allowable moment



●Mp= FA x LA (N·m [in·lbf])
●My = FB x LB (N·m [in·lbf])
●Mr = FC x LC (N·m [in·lbf])

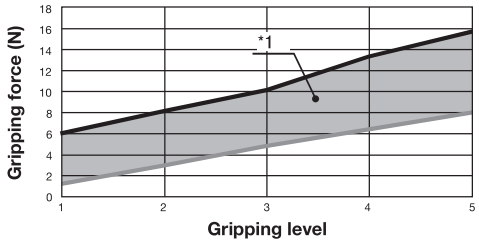
[Electric hand flat type]

Load and moment / Type	FX N	Mp N·m [in·lbf]	My N·m [in·lbf]	Mr N·m [in·lbf]
EW2 □ 8	40	0.5 [4.4]	0.3 [2.7]	0.6 [5.3]
EW2 □ 18	120	1.0 [8.9]	1.0 [8.9]	2.0 [17.7]
EW2 □ 28	190	3.0 [26.6]	4.0 [35.4]	8.0 [70.8]

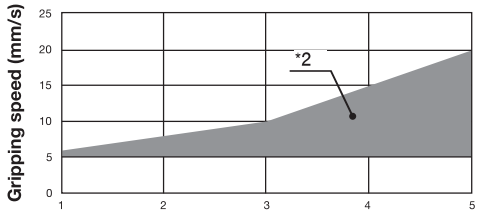
● Gripping force specifications

EW2H8
EW2HL8

Gripping level ⇔ gripping force



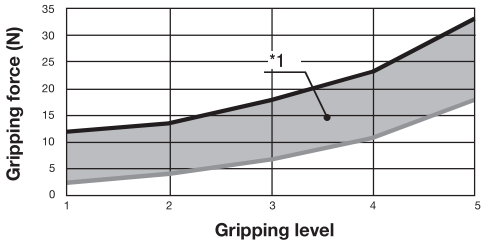
Gripping level ⇔ available speed range



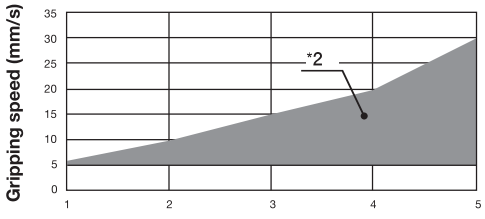
*The above gripping graph is an estimate.

EW2H18
EW2HL18

Gripping level ⇔ gripping force



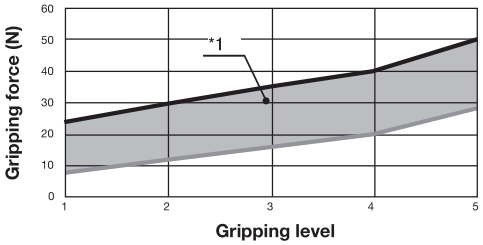
Gripping level ⇔ available speed range



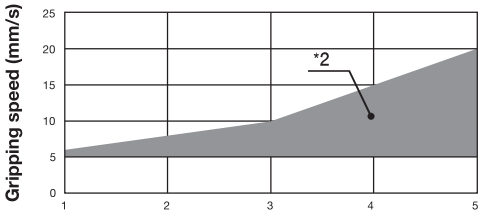
*The above gripping graph is an estimate.

EW2H28
EW2HL28

Gripping level ⇔ gripping force



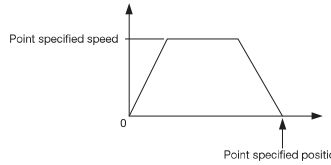
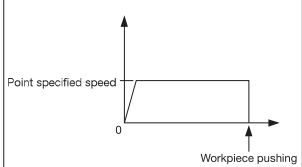
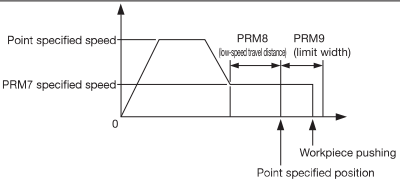
Gripping level ⇔ available speed range



*The above gripping graph is an estimate.

*1 Force is generated within the graph range at the set gripping level.
*2 The gripping speed can be set within the graph range at the set gripping level.

●Electric hand operation mode

Mode	Positioning Acceleration or deceleration is performed and movement is stopped at the specified point.		Gripping*1 Perform operation at a constant speed and pushing at the set force.		Pushing with acceleration/deceleration movement Perform acceleration/deceleration movement and add pushing operation.
Setting value	A	I*2	C	O	U
Description	Move to the position of the specified point with the coordinates of 0 as the origin position	Move to the position of the specified point from the current position	Operate to close side	Operate to open side	Move to the specified point and perform pushing operation at the speed of PRM7 from the distance before the point specified at PRM8
Operation pattern					
Remarks	—		—		Suitable for high-frequency soft gripping.	

*1 Do not use C to O, or O to C motion in gripping mode as it will result in malfunction.
*2 When operation is performed in mode I after changing the position manually, the reference position is that before changing the position manually.
*3 Perform workpiece gripping in the gripping mode (C, O) or pushing mode (U) with acceleration/deceleration movement.
When a workpiece is gripped with the positioning mode (A, I), an alarm is output and gripping cannot be performed normally.