



Assist Wheel Drive EW1A Series



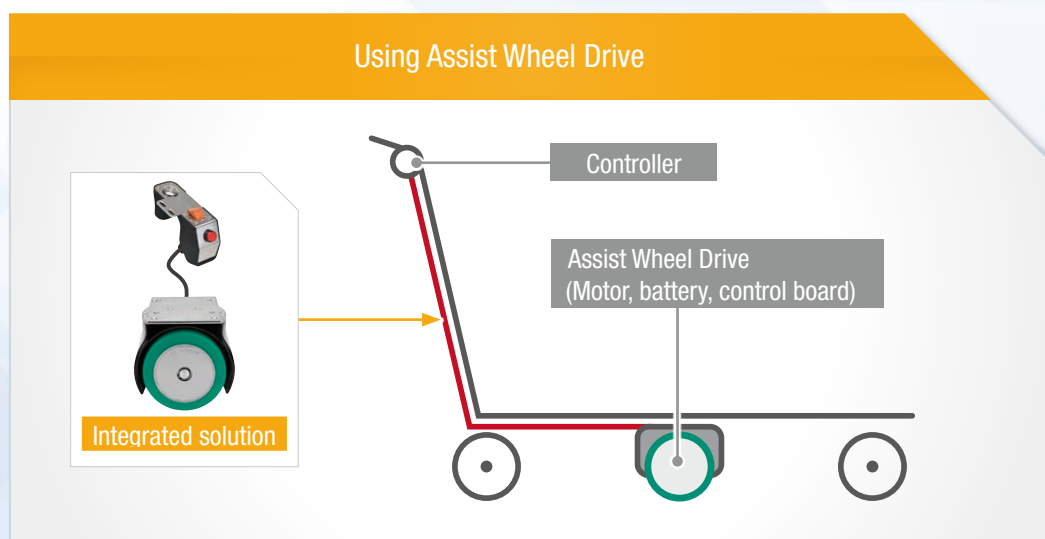
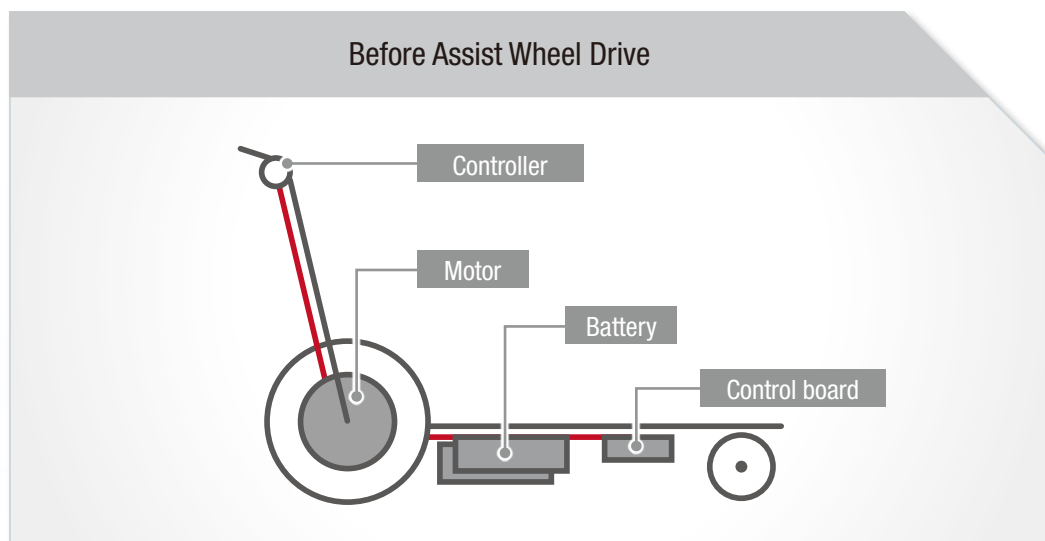
Electrical assistance to industrial manual
handling equipment.
Smart solution for moving heavy loads.

IDEC CORPORATION

Assist Wheel Drive Eases the Transport of Heavy Loads



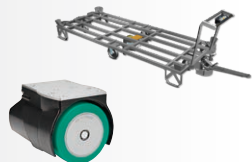
- Convert your trolley into an electric power-assisted trolley with a simple integrated structure.
- Electrical assistance for moving heavy loads.



The Assist Wheel Drive can be Mounted on a wide range of equipments operating in various environments

Automotive / Construction machinery / Agricultural machinery

Transfer between processes



Manufacturing / Construction material

Transfer of parts



Warehouse logistics

Material handling



Medical industry / Food industry

Material handling

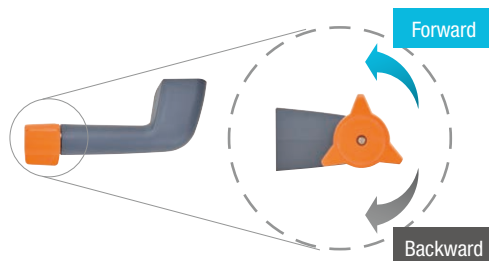


Handle operating direction

Controllers can be selected according to the application. The handle can be rotated to move forward or backward proportionally.



Forward/reverse and speed control (Thumbwheel)



Heavy loads can be transported

SERIES 150

IP43



SERIES 160

IP66

(*)



- The use of the accessory suspension bracket (EW9Z-1MCS3) is recommended.
- If the suspension bracket (EW9Z-1MCS3) is not used, please pay attention to the maximum vertical load that can be applied to each product in your design.
- *1) Excluding interface.

Assist Wheel Drive

Convert your trolley into an electric power-assisted cart with a simple structure

- Electric assistance to make moving heavy loads easier and safer
- Capable of towing up to 1000Kg (Series 150) and 750Kg (Series 160).

Assist Wheel Drive

Main unit

Quantity: 1

Name	Shape	Part No.	Wheel diameter	Maximum transfer load (*1)	External brake (*2)
Series 150 main unit		EW1A-150SNA	150mm	1000kg	Not included
		EW1A-150SNB			Included
		EW1A-150S1A			Not included
		EW1A-150S1B			Included
		EW1A-150S2A			Not included
		EW1A-150S2B			Included
Series 160 main unit		EW1A-160MNA	160mm	750kg	Not available
		EW1A-160M1A			Not available
		EW1A-160M2A			Not available

* Internal batteries can be added ref. EW9Z-1BINT03V

*1) Reference value Differs depending on the environment and usage conditions.

*2) The external brake is a non-excitation actuated type. (It is released when an excitation voltage is applied.) The internal brake (motor brake) is standard on all models.

Controller

Name	Shape	Part No.	Power button	Stop button	Status indicator light
Assist Wheel Drive controller (with stop button)		EW9Z-1AC1R	Available	Available	Included
Assist Wheel Drive controller (with illuminated stop button)		EW9Z-1AC2R	Available	Available (Illuminated)	Included
Controller handle (with charge status indicator light)		EW9Z-1ARH2	Available	Not available	Included (with battery charge status LED indicator)
Controller handle (without battery charge status LED indicator)		EW9Z-1ARH1	Not available	Not available	Not included

Battery

Name	Shape	Part No.	Internal/External	Battery type	Capacity
Internal battery 3 Ah (*3)		EW9Z-1BINT03V	Internal battery	NiMH battery	3Ah
External battery 9Ah (*4)		EW9Z-1BEXT09A	External battery	NiMH battery	9Ah
External battery 15Ah (*4)		EW9Z-1BEXT15A	External battery	NiMH battery	15Ah

*3) Up to two 3Ah internal batteries can be installed in the main unit of the assist wheel drive.

*4) Cannot be used together with an internal battery.

Maintenance parts

Name	Part No.	Remarks
Wheel for SERIES 150	SAV-P-043	Wheel diameter 150 mm, PU hardness, 63 sh.A
Wheel for SERIES 160	SAV-P-005	Wheel diameter 158 mm, PU hardness, 70 sh.A

Accessory

Name	Part No.	Remarks
Suspension bracket	EW9Z-1MCS3	Suspension for main unit
Illuminated pushbutton	EW9Z-1PBD	Illuminated pushbutton for power ON/OFF
Pushbutton switch to prevent entrapment	EW9Z-1ERB2M	Pushbutton switch to prevent entrapment / cable 1.8 m
Cable for controller handle	EW9Z-1AC3M	Connection cable for main unit and controller handle (EW9Z-1ARH2, EW9Z-1ARH1, EZ9Z-1PBD) (3m)
Extension cable for EW9Z-1AC1R or EW9Z-1AC2R only (2m)	EW9Z-1KCAC	Extension cable for controller (2m)
Battery charger (*5)	MASCOT1A8US	Battery charger 3.6m (Input: 100 to 240V AC Output: 24V DC 1.8A)
Charging cable for internal battery	EW9Z-1CC2MW	Charging cable for internal battery (2m)
Connection cable for external battery	EW9Z-1BCEXT3M	Connection cable for external battery and main unit (3m)
Connection cable for external battery (not optional)	EW9Z-1BCEXT2MF	Connection cable for external battery (not optional) and main unit (3m)

*5) This battery charger is a dedicated product for assist wheel drives and external batteries (EW9Z-1BEXT**A). It cannot be used with other devices.

Specifications

Main unit

Part No.	EW1A-150SNA	EW1A-150SNB	EW1A-160MNA
Wheel diameter	150mm		158mm
Wheel material	Polyurethane (Hardness: 63 Sh.A (for ezW150I-0/S and ezW150I-0/BS))		Polyurethane (Hardness: Shore A70)
Rated operating voltage	24V DC		
Operating voltage range	16 to 30V DC		
Rated current	13A at 170W (S3, duty ratio 15%, 5 minutes maximum)		10A at 130W (S1)
Maximum current	20A		16A
Rated output	170W		130W
Speed range	0 to 5km/h		
Rated speed	166rpm		167rpm
Rated driving force (conveying force)	15daN at 4km/h		9daN at 5km/h
Maximum driving force (conveying force)	35daN		27daN
Instantaneous maximum torque	27N·m		22N·m
Brake torque	Internal brake	27N·m	22N·m
	External brake	Not available	32N·m (*1)
Maximum transfer load (*2)	1000kg		750kg
Max. vertical weight	400kg		50kg
Motor type	DC brushless motor		
Reduction gear	2-stage helical gear		
Optional connector	5V DC output x 1, 24V DC output x 2		
USB port	Type-B (ez-Config connection)		
Operating ambient temperature	-10 to +40°C (no freezing)		
Operating atmosphere	Free from corrosive gases		
Degree of protection	IP43		IP66 (*3)
Location of use	Indoors		
Life expectancy (approx.) (*4)	3000 hours/10,000km		2000 hours/5000km
Weight (approx.)	10kg	11kg	6kg

*1) The external brake is a non-excitation actuated type. (Reset when an excitation voltage is applied.)

*2) Reference value Differs depending on the environment and usage conditions.

*3) Excluding interface part.

*4) Differs depending on usage conditions. Life expectancy is an estimate and does not guarantee the entire system.

Controller

Part No.	EW9Z-1AC1R	EW9Z-1AC2R
Main unit	Power button	AV320220000840K
	Thumbwheel	HRS209B0
	Stop button	XA1E-BV3U01Y
Mounting diameter	ø20 to 35mm	
Operating ambient temperature	-25 to +55°C (no freezing)	
Operating atmosphere	Free from corrosive gases	
Degree of protection	IP20	
Location of use	Indoors	

Battery

Part No.	EW9Z-1BINT03V	EW9Z-1BEXT09A	EW9Z-1BEXT15A
Internal/External	Internal battery (*5)		External battery (*6)
Battery type	NiMH battery		
Capacity	3Ah (70Wh)	9Ah (210Wh)	15Ah (350Wh)
Continuous travel distance (hours) (*7)	2.8 km (0.7 hours)	8.4km (2.1 hours)	14km (3.5 hours)
Charging time (*8)	1.5 hours	4.5 hours	7.5 hours
Operating ambient temperature	-10 to +40°C (no freezing)		
Operating atmosphere	Free from corrosive gases		
Life expectancy (approx.) (*9)	650 cycles (100% DOD) (About 2 to 3 years)	500 cycles (70% DOD) (Approx. 2 years)	
Weight (approx.)	1.2kg	4.9kg	6.5kg

*5) Up to two 3Ah internal batteries can be installed in the main body of the Assist Wheel Drive.

*6) Cannot be used together with an internal battery.

*7) Reference value when running continuously at 4 km/h on a flat road surface with a load of 600 kg.

*8) When charged to 90% using battery charger MASCOT1A8US (1.8A output).

*9) Differs depending on usage conditions. Life expectancy is an estimate and does not guarantee the entire system.

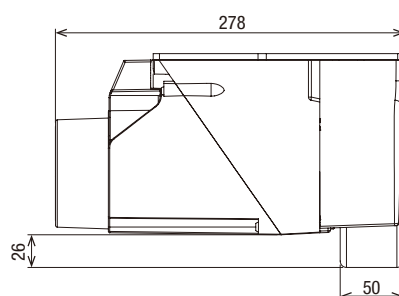
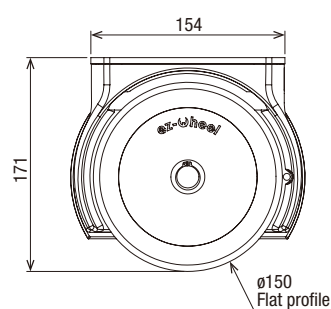
Dimensions

All dimensions in mm.

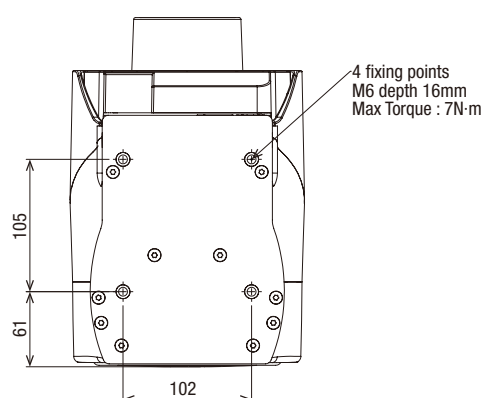
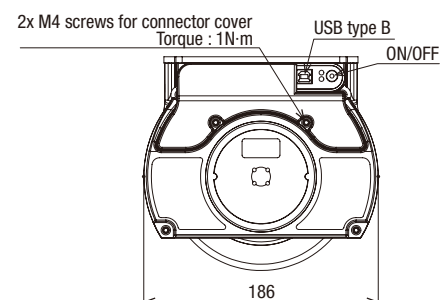
Main unit

SERIES 150

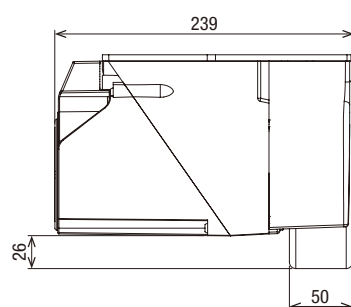
EW1A-150SNA and EW1A-150SNB



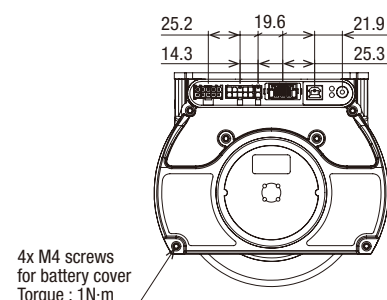
Series 150 with break



Series 150 with break

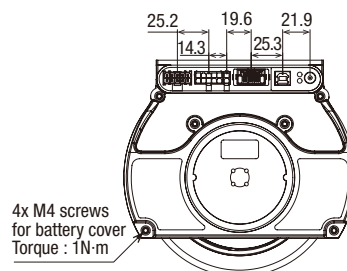
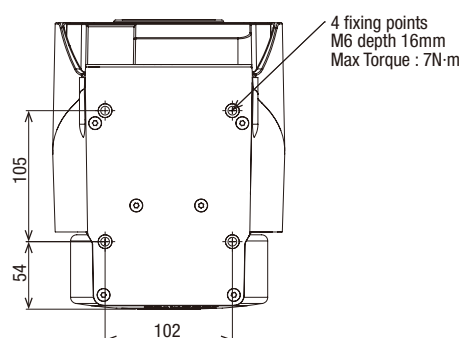
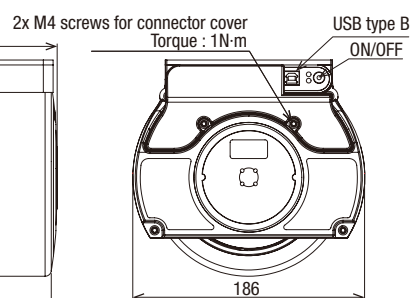
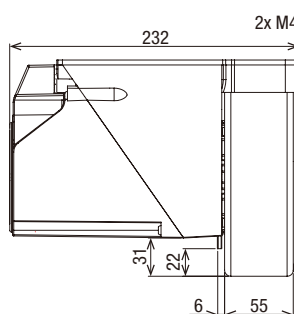
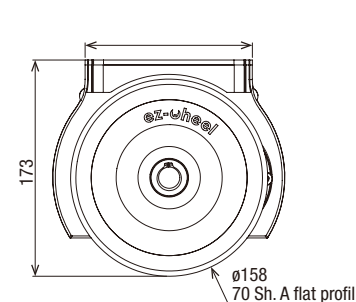


Series 150 without break


Series 150 without
connector cover

SERIES 160

EW1A-160MNA

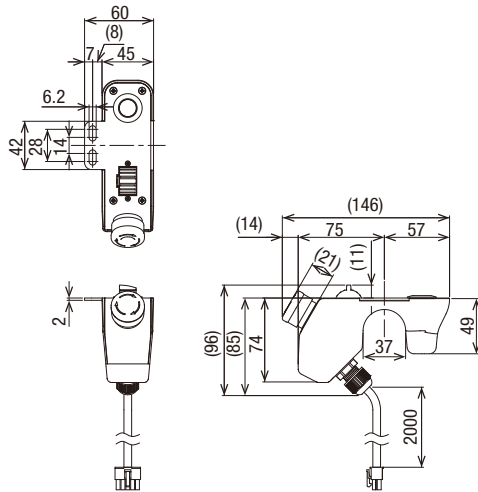

Series 160 without
connector cover

Dimensions

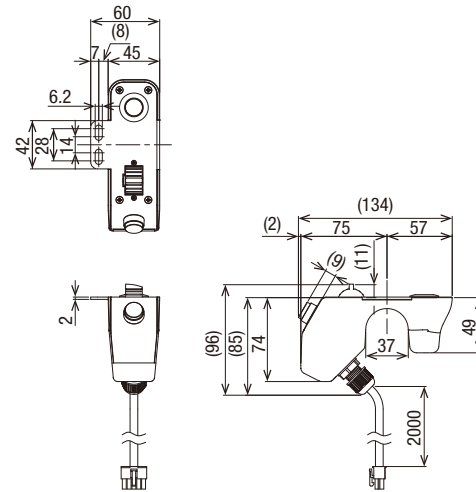
All dimensions in mm.

Controller

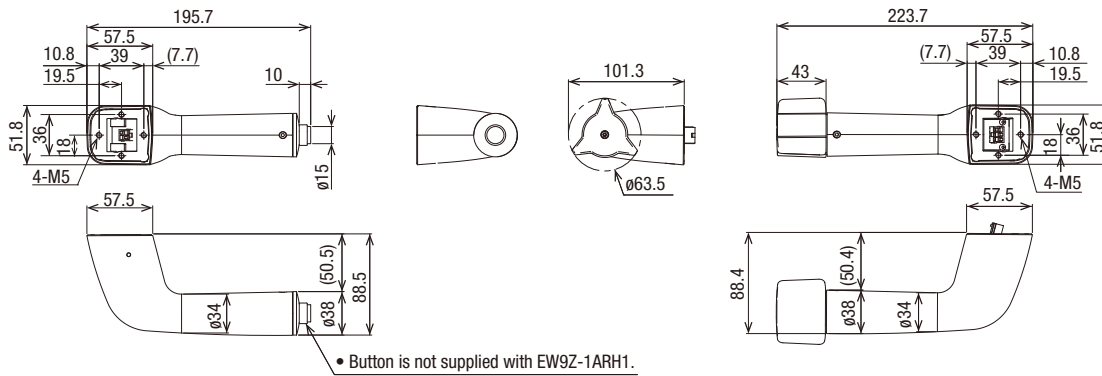
EW9Z-1AC1R



EW9Z-1AC2R

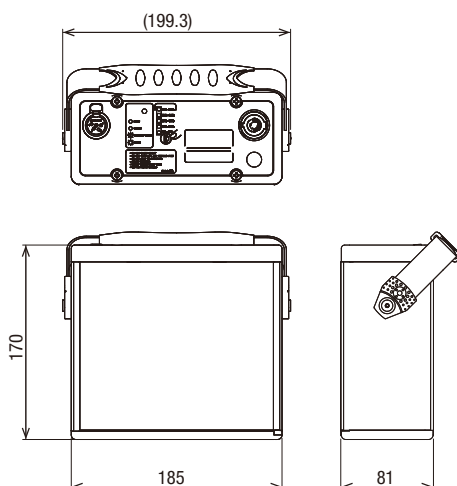


EW9Z-1ARH2, EW9Z-1ARH1

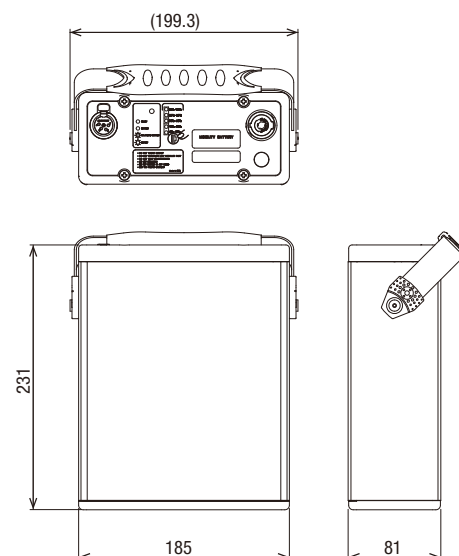


Battery

EW9Z-1BEXT09A



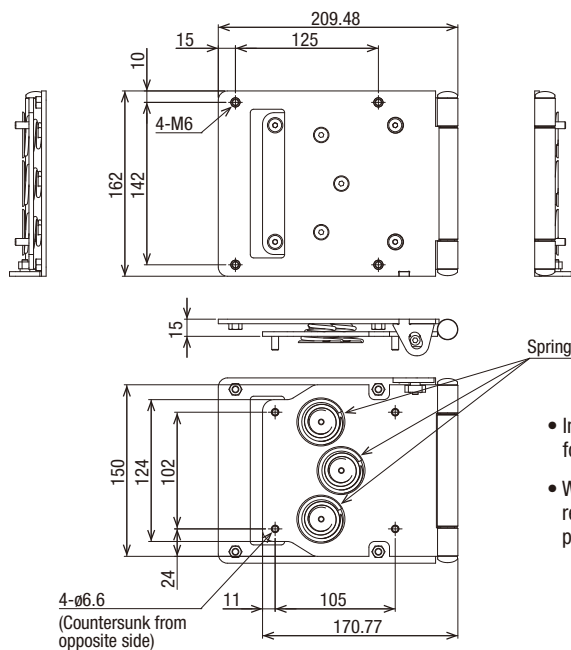
EW9Z-1BEXT15A



Dimensions

Suspension bracket

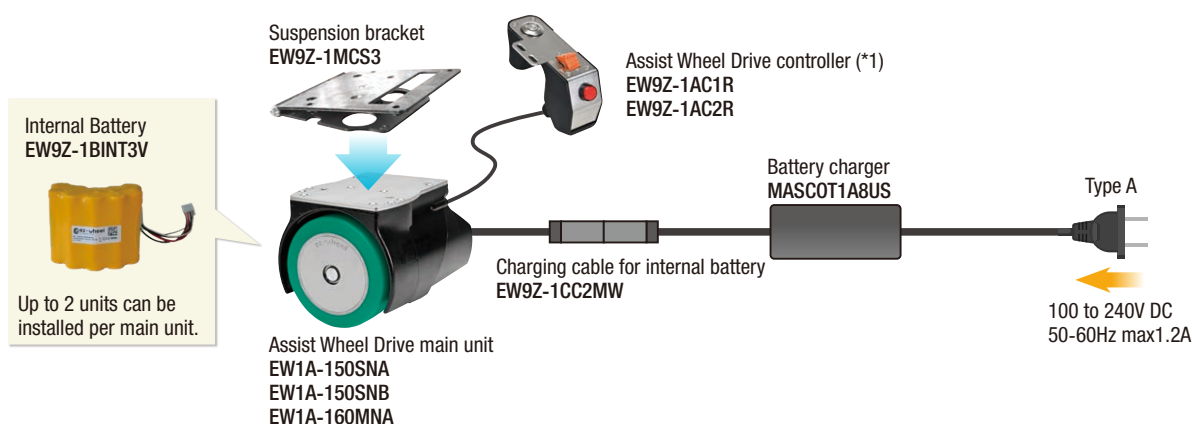
EW9Z-1MCS3



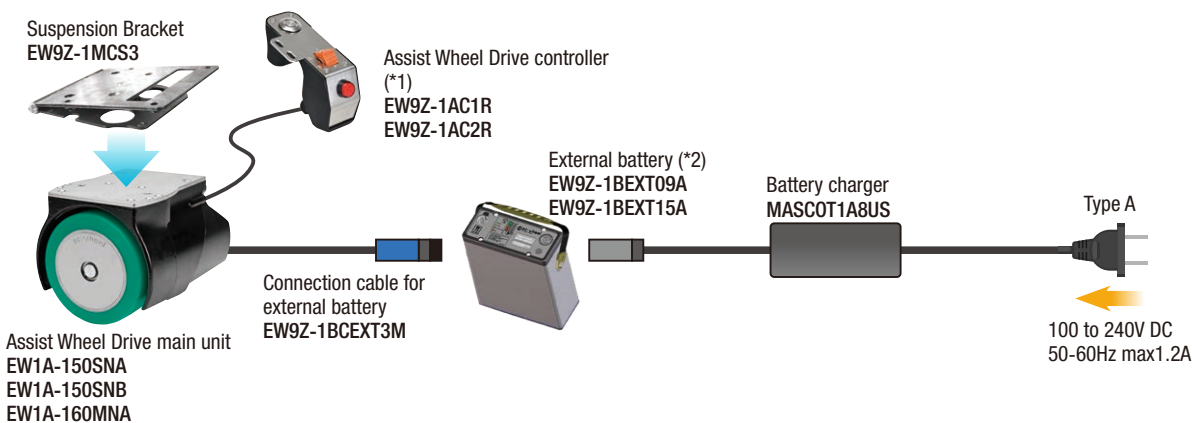
- Includes 4 screws (M6x16 hexagon socket countersunk screw) for mounting on the main unit of the Assist Wheel Drive.
- When attaching to Assist Wheel Drive 160 (EW1A-160MNA), remove one spring from the middle and use it. For details, please contact us.

System configuration

Assist Wheel Drive controller + internal battery



When using Assist Wheel Drive controller + external battery



*1) Includes 2m cable. If a 2-meter cable is not long enough, add an extension cable to the controller (2m) (EW9Z-1KCAC).

*2) Cannot be used together with an internal battery.

ez-Config

ez-Config is a software for setting the speed and interface of the main unit of the Assist Wheel Drive, controller display, and read/write data.

The software can be used by connecting a PC to the main unit of the Assist Wheel Drive with a commercially available USB cable. Use a USB 2.0 Type-A male to Type-B male cable.

Configuration

ez-Config - ezW150 / ezW160

ez-wheel Series 150 / 160

Login : IDECCorp Version E.1

Identity Configuration Advanced

(1) Forward/reverse speed

(2) Acceleration time

(3) Deceleration mode

(4) Change direction

(5) Maximum speed mode

(6) Time to sleep mode

(7) Assist time limit

(8) Controller settings

Hand control reference :
Generic
☐ Reverse

Out of Range

Out of Range

100

50

0

-50

-100

0.5 1.5 2.5 3.5 4 5.5

configured by -

Connect Download

Open Config Save Config Save to Text

Advanced

ez-Config - ezW150 / ezW160

ez-wheel Series 150 / 160

Login : IDECCorp Version E.1

Identity Configuration Advanced

(1) Optional connector setting

(2) Power button and indicator light setting

(3) Wheel operation when the charger is connected

Option connector

Power output :
☐ 24V activated

Emergency reverse :
Move forward

Button and display

On/Off button Type :
Impulse button

Display configuration :
☐ Use Status information
☒ Use Battery information

Battery display / charge level :

	Internal	External
Green light when >	50 %	14.0 V
Orange light when >	30 %	13.5 V
Red light when <	30 %	13.5 V
Red flashing when	Empty or <	12.0 V

Charger

When charging
☒ Wheel ON
☐ Wheel OFF

configured by -

Connect Download

Open Config Save Config Save to Text



Safety Precautions

- Turn off the product before starting installation, removal, wiring, maintenance, and inspection. Failure to turn power off may cause electrical shock or fire.
- To operate and use the Assist Wheel Drive appropriately, note the following precautions.

General precautions

- Do not disassemble, repair, or modify the product.
- Otherwise, the safety performance may be impaired.
- Do not expose the product to heat sources.
- Do not expose the product to fire.
- Do not insert metal parts into the connector.
- Under no circumstances should changes be made to the product that are not authorized in the instruction manual.
- Do not make any modifications that may affect product specifications.
- Do not use high-pressure to clean the product.
- A damp sponge for cleaning is recommended.
- Do not use solvents or corrosive chemicals.

Instructions

- Be sure to read the instruction manual carefully before performing installation, wiring, or maintenance work.
- The wheel uses rechargeable batteries and must maintain a charge level even when it is not in use. Lack of maintenance may degrade performance or cause irreversible damage to the battery.
- It is recommended to recharge the battery once a month. Do not leave uncharged for more than 50 days.
- Always recharge the wheels before a prolonged shutdown.
- Ensure that wheels not in use are not left fully discharged.

Ordering Terms and Conditions

Thank you for using IDEC Products.

By purchasing products listed in our catalogs, datasheets, and the like (hereinafter referred to as "Catalogs") you agree to be bound by these terms and conditions. Please read and agree to the terms and conditions before placing your order.

1. Notes on contents of Catalogs

- (1) Rated values, performance values, and specification values of IDEC products listed in this Catalog are values acquired under respective conditions in independent testing, and do not guarantee values gained in combined conditions.
Also, durability varies depending on the usage environment and usage conditions.
- (2) Reference data and reference values listed in Catalogs are for reference purposes only, and do not guarantee that the product will always operate appropriately in that range.
- (3) The specifications / appearance and accessories of IDEC products listed in Catalogs are subject to change or termination of sales without notice, for improvement or other reasons.
- (4) The content of Catalogs is subject to change without notice.

2. Note on applications

- (1) If using IDEC products in combination with other products, confirm the applicable laws / regulations and standards.
Also, confirm that IDEC products are compatible with your systems, machines, devices, and the like by using under the actual conditions. IDEC shall bear no liability whatsoever regarding the compatibility with IDEC products.
- (2) The usage examples and application examples listed in Catalogs are for reference purposes only. Therefore, when introducing a product, confirm the performance and safety of the instruments, devices, and the like before use. Furthermore, regarding these examples, IDEC does not grant license to use IDEC products to you, and IDEC offers no warranties regarding the ownership of intellectual property rights or non-infringement upon the intellectual property rights of third parties.
- (3) When using IDEC products, be cautious when implementing the following.
 - i. Use of IDEC products with sufficient allowance for rating and performance
 - ii. Safety design, including redundant design and malfunction prevention design that prevents other danger and damage even in the event that an IDEC product fails
 - iii. Wiring and installation that ensures the IDEC product used in your system, machine, device, or the like can perform and function according to its specifications
- (4) Continuing to use an IDEC product even after the performance has deteriorated can result in abnormal heat, smoke, fires, and the like due to insulation deterioration or the like. Perform periodic maintenance for IDEC products and the systems, machines, devices, and the like in which they are used.
- (5) IDEC products are developed and manufactured as general-purpose products for general industrial products. They are not intended for use in the following applications, and in the event that you use an IDEC product for these applications, unless otherwise agreed upon between you and IDEC, IDEC shall provide no guarantees whatsoever regarding IDEC products.
 - i. Use in applications that require a high degree of safety, including nuclear power control equipment, transportation equipment (railroads / airplanes / ships / vehicles / vehicle instruments, etc.), equipment for use in outer space, elevating equipment, medical instruments, safety devices, or any other equipment, instruments, or the like that could endanger life or human health
 - ii. Use in applications that require a high degree of reliability, such as provision systems for gas / waterworks / electricity, etc., systems that operate continuously for 24 hours, and settlement systems
 - iii. Use in applications where the product may be handled or used deviating from the specifications or conditions / environment listed in the Catalogs, such as equipment used outdoors or applications in environments subject to chemical pollution or electromagnetic interference
If you would like to use IDEC products in the above applications, be sure to consult with an IDEC sales representative.

3. Inspections

We ask that you implement inspections for IDEC products you purchase without delay, as well as thoroughly keep in mind management/maintenance regarding handling of the product before and during the inspection.

4. Warranty

(1) Warranty period

The warranty period for IDEC products shall be one (1) year after purchase or delivery to the specified location. However, this shall not apply in cases where there is a different specification in the Catalogs or there is another agreement in place between you and IDEC.

(2) Warranty scope

Should a failure occur in an IDEC product during the above warranty period for reasons attributable to IDEC, then IDEC shall replace or repair that product, free of charge, at the purchase location / delivery location of the product, or an IDEC service base. However, failures caused by the following reasons shall be deemed outside the scope of this warranty.

- i. The product was handled or used deviating from the conditions / environment listed in the Catalogs
 - ii. The failure was caused by reasons other than an IDEC product
 - iii. Modification or repair was performed by a party other than IDEC
 - iv. The failure was caused by a software program of a party other than IDEC
 - v. The product was used outside of its original purpose
 - vi. Replacement of maintenance parts, installation of accessories, or the like was not performed properly in accordance with the user's manual and Catalogs
 - vii. The failure could not have been predicted with the scientific and technical standards at the time when the product was shipped from IDEC
 - viii. The failure was due to other causes not attributable to IDEC (including cases of force majeure such as natural disasters and other disasters)
- Furthermore, the warranty described here refers to a warranty on the IDEC product as a unit, and damages induced by the failure of an IDEC product are excluded from this warranty.

5. Limitation of liability

The warranty listed in this Agreement is the full and complete warranty for IDEC products, and IDEC shall bear no liability whatsoever regarding special damages, indirect damages, incidental damages, or passive damages that occurred due to an IDEC product.

6. Service scope

The prices of IDEC products do not include the cost of services, such as dispatching technicians. Therefore, separate fees are required in the following cases.

- (1) Instructions for installation / adjustment and accompaniment at test operation (including creating application software and testing operation, etc.)
- (2) Maintenance inspections, adjustments, and repairs
- (3) Technical instructions and technical training
- (4) Product tests or inspections specified by you

The above content assumes transactions and usage within your region. Please consult with an IDEC sales representative regarding transactions and usage outside of your region. Also, IDEC provides no guarantees whatsoever regarding IDEC products sold outside your region.

IDEC CORPORATION

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EP1789-1-US-Assist-Wheel-Drive

