

α STEP AZ Series mini Driver

DC Input

Modular Automation Products



The α STEP **AZ Series** now includes a **mini driver** option.
Compatible with battery power operations for use in a wider range of applications.

EtherCAT
Drive Profile-Compatible
Ether**CAT**



AZD-KRED

EtherNet/IP™-Compatible
Ether**Net/IP**



AZD-KREP

PROFINET-Compatible
PROFINET



AZD-KRPN

RS-485 Communication Type
Modbus (RTU)



AZD-KR2D

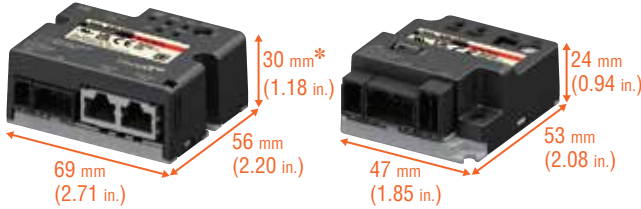
Pulse Input Type with
RS-485 Communication



AZD-KRX

The mini Driver Allows for Smaller and More

Compact Design to Fit in Small Spaces



AZD-KRED AZD-KREP
AZD-KRPN AZD-KRX

AZD-KR2D

*The **AZD-KRX** is 25 mm (0.98 in.)

Installation Space is Minimized

No DIN rail required. Can be installed directly to equipment with 2 screws.



AZD-KRED AZD-KREP
AZD-KRPN AZD-KRX



AZD-KR2D

Light Weight Design Reduces Load on Equipment

56 g (1.98 oz)

Approx. 60 g (2.11 oz)



AZD-KR2D



1 medium egg

● The mass of all models except the **AZD-KR2D** is 84–110 g (2.82–3.88 oz).

Example: When mounted inside AMR/AGV.



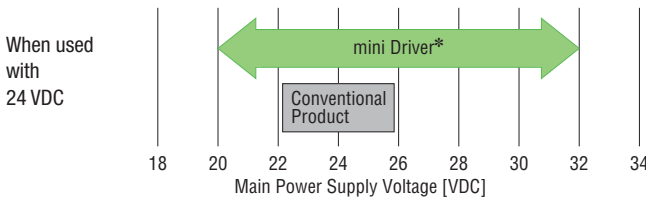
Reduce overall equipment mass
Reduce Power Consumption for Drive Wheels

→ See use examples (Page 4)

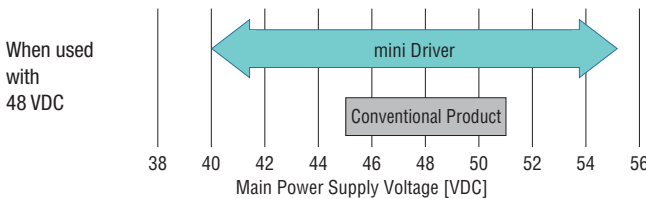
Compatible with Battery Power

Accepts a wide power supply voltage range for battery power operation. Supports 24 VDC and 48 VDC.

● Operable Voltage Range

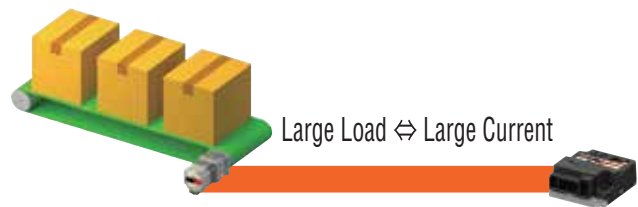


* For a motor with an electromagnetic brake, the range is 22.8 to 32 VDC



Energy Savings through Optimized Current Control

The servo emulation mode optimizes the current provided to the motor to match the load conditions.



Example: When mounted inside AMR/AGV.



Reduce Power Consumption.
Increase Battery Life

→ See use examples (Page 4)

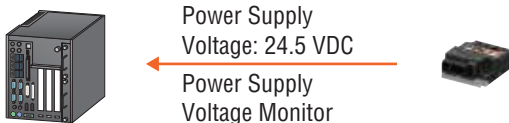
Power-Efficient Devices

What Are Modular Automation Products?

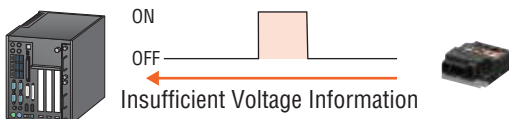
Modular Automation Products are a group of products that share the common features of being battery-powered, compact and lightweight. Optimized for use with self-propelled devices and mobile equipment, they contribute to the flexibility of automation lines and mobile automation.

Visualization of Power Supply Voltage

It is possible to monitor the driver power supply voltage from the host controller.



If the driver power supply voltage drops below a pre-set threshold a signal is output.



When mounted inside self-propelled devices

Avoid Stoppages due to Insufficient Battery

→ See use examples (Page 4)

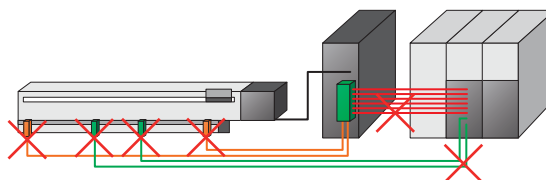


No External Sensors Required

With the **AZ** Series, no external sensors and its related wiring are required.

Example of Wiring when Using External Sensors.

The **AZ** Series eliminates the need for these external sensors and wires shown in green and red.



High positioning accuracy can be achieved by using the mechanical battery-free absolute sensor (ABZO Sensor).



Compatible with Various Interfaces

These are compatible with the major industrial networks used around the globe. Pulse control is also possible.

| Interface | Driver Type (Driver type name) |
|--------------|--|
| EtherCAT | EtherCAT Drive Profile-Compatible |
| EtherNet/IP | EtherNet/IP-Compatible |
| PROFINET | PROFINET-Compatible |
| Modbus (RTU) | RS-485 Communication Type |
| Pulse | Pulse Input Type with RS-485 Communication |

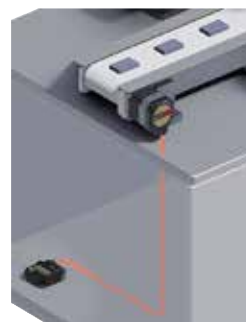
*The **AZD-KRED** passes the official EtherCAT conformance test.

*The **AZD-KR2D** is also compatible with CC-Link and MECHATROLINK control when used with a network converter (gateway).

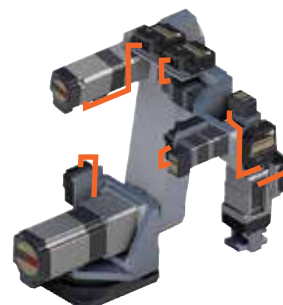
Up to 10 m (32.8 ft) Connection Cable Extension

Connection cables can be selected to suit the installation environment, with lengths of 0.5 m (1.6 ft), 1 m (3.3 ft), 3 m (9.8 ft), 5 m (16.4 ft), 10 m (32.8 ft) available.

When the motor and driver are far apart, 3 m (9.8 ft), 5 m (16.4 ft) and 10 m (32.8 ft) cables are recommended.



When the motor and driver are close, 0.5 m (1.6 ft) and 1 m (3.3 ft) cables are recommended.



*Flexible connection cables in the same lengths are also available.

Example A: Incorporation into Self-propelled Devices

Equipment Problem Battery operation time must be maximized.

The equipment's overall power consumption can be reduced by lowering the equipment's overall mass, and by reducing the motor's running current when large amounts of torque aren't required.



With the α STEPAZ Series mini Driver...

Light Design Reduces Load on Equipment

By reducing the overall equipment mass, the power consumption for the drive wheels can be reduced.

56 g (1.98 oz) Approx. 60 g (2.11 oz)



AZD-KR2D

1 medium egg

● The mass of all models except the **AZD-KR2D** [84–110 g (2.82–3.88 oz)]

Energy Savings through Optimized Current Control

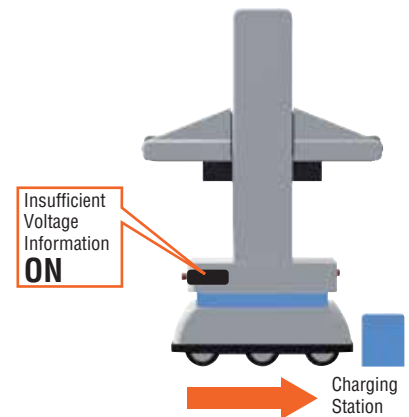
The current supplied to the motor is optimized to suit the load (also called servo emulation mode), thus reducing power consumption. This allows for a reduction in the number of times the battery must be charged.



When the load is light, the current supplied to the motor is automatically reduced.

Visualization of Power Supply Voltage

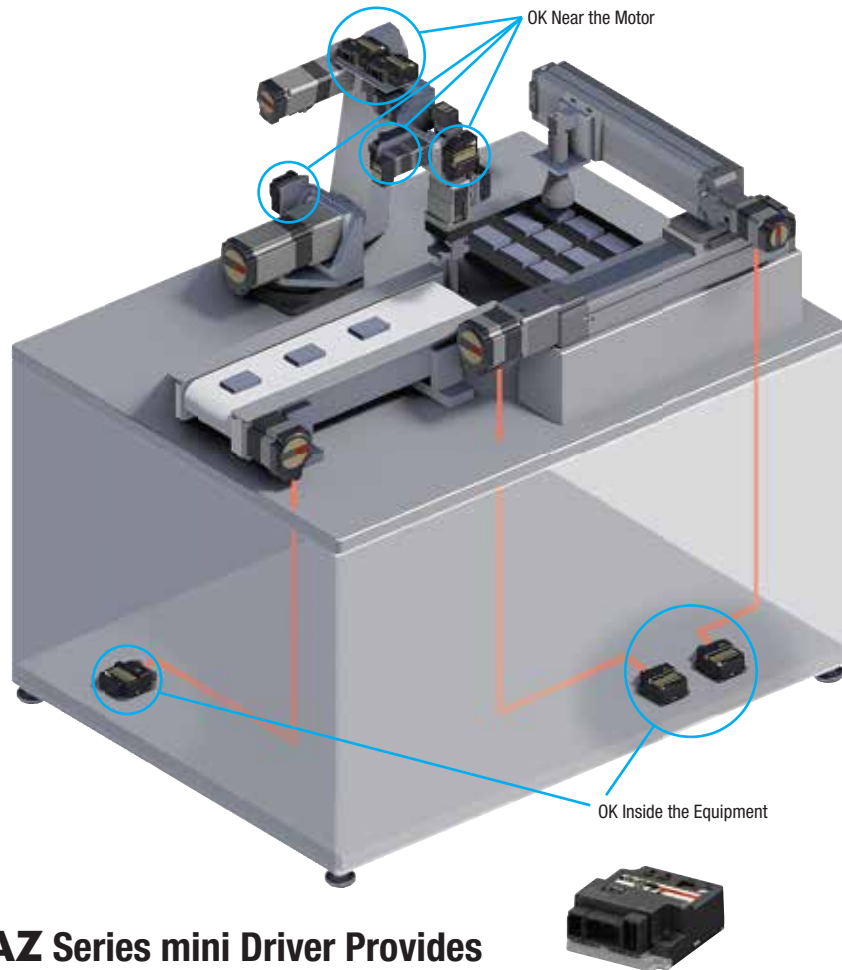
The power supply voltage can be monitored using the monitoring function, and the battery is recharged at the appropriate time.



Example B: Incorporation into Stationary Equipment

Equipment Problem Install the driver and control systems in separate locations to reduce overall equipment size.

Install the mini drivers in the empty enclosure space or next to the work, allowing for a smaller control cabinet design.



The α STEPAZ Series mini Driver Provides

Compact Design to Fit in Small Spaces

Volume is greatly reduced in comparison to a box-type DC driver.



AZD-KD

Size
Reduced
More Than
60%!



AZD-KR2D

No External Sensors Required

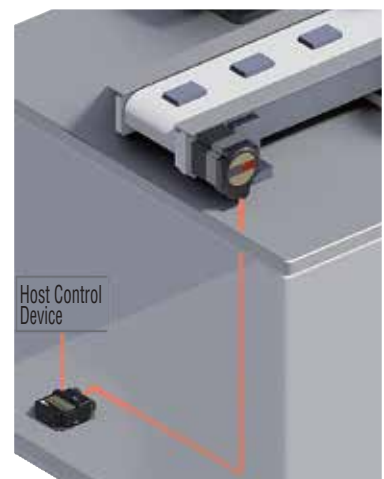
No external sensor or related wiring is necessary. Because there are no external sensors and wiring, the size and weight of the equipment can be reduced. In addition, the work time for wiring can be reduced.

FA Network Compatible

Common Network Protocols are available to support the upper controller, reduce the burden of programming and support quicker installation time.

Up to 10 m (32.8 ft) Connection Cable Extension

The length of the cable between the motor and driver can be selected to suit the installation environment. Extension of up to 10 m (32.8 ft) are available.



■ Applicable Series

The **AZ** Series mini Driver DC Power Input can be used in combination with the following motors and linear & rotary actuators.

● Motors

- **AZ** Series DC Power Input

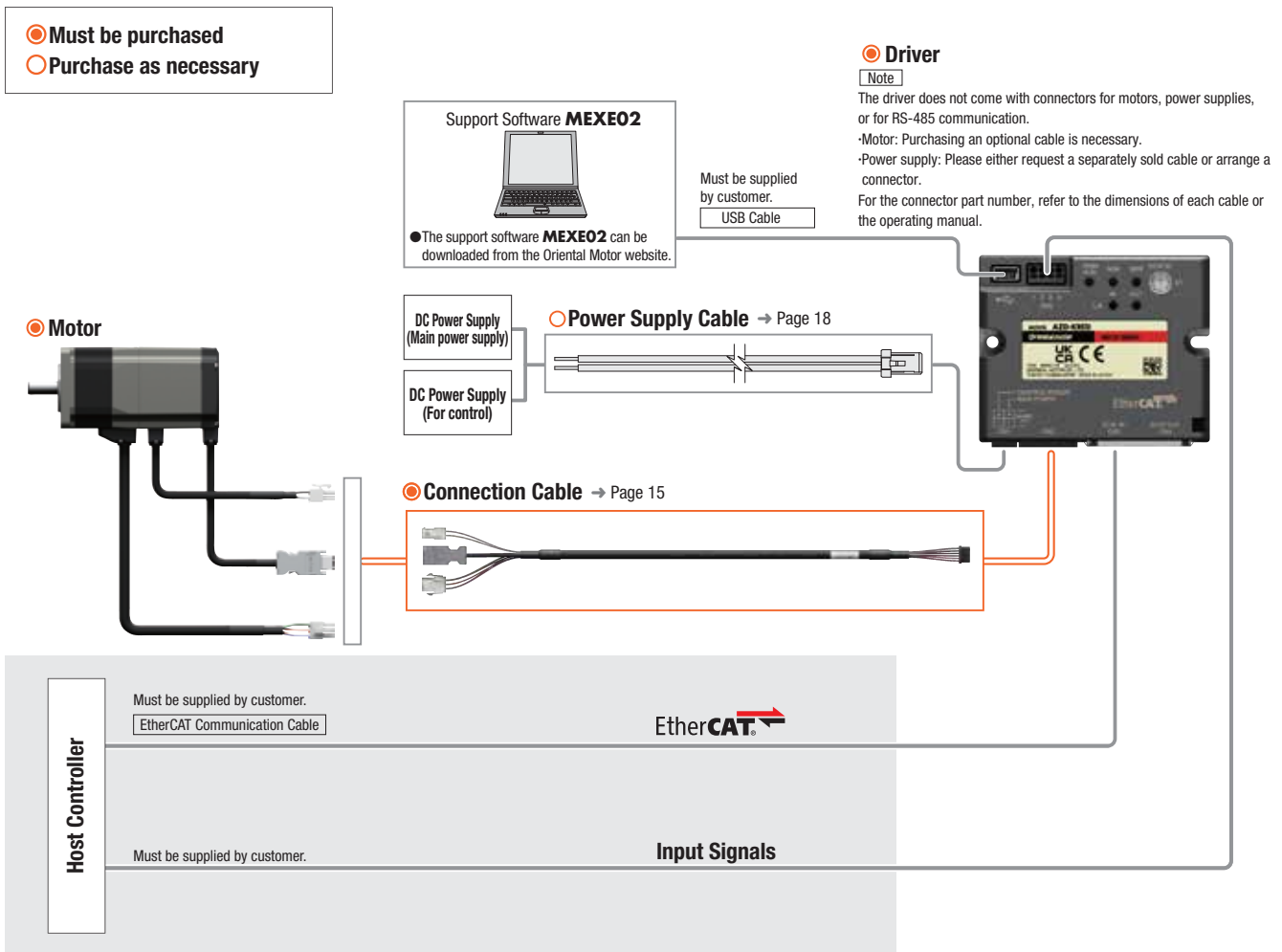
● Electric Linear & Rotary Actuators

- Electric Linear Slides **EZS** Series DC Power Input **AZ** Series Equipped
- Electric Cylinders **EAC** Series DC Power Input **AZ** Series Equipped
- Compact Electric Cylinders **DR** Series / **DRS2** Series **AZ** Series Equipped
- Electric Grippers **EH** Series **AZ** Series Equipped
- Hollow Rotary Actuators **DGII** Series DC Power Input **AZ** Series Equipped
- Rack and Pinion System **L** Series DC Power Input **AZ** Series Equipped

● For applicable motor and electric linear & rotary actuator combinations, please see the Oriental Motor website or refer to each brochure of product series.

■ System Configuration

● When the Standard Type Electromagnetic Brake Motor is Combined with an EtherCAT Drive Profile-Compatible mini Driver Motors, drivers, and connection cables / flexible connection cables must be ordered separately.



● **Combination of AZ Series Standard Type Electromagnetic Brake Motor and mini Driver RS-485 Communication Type**
Motors, drivers, and connection cables / flexible connection cables must be ordered separately.

- **Must be purchased**
- **Purchase as necessary**

● **Driver**

Note


The driver does not come with connectors for motors, power supplies, or for RS-485 communication.

•Motor: Purchasing an optional cable is necessary.

•Power supply: Please either request a separately sold cable or arrange a connector.

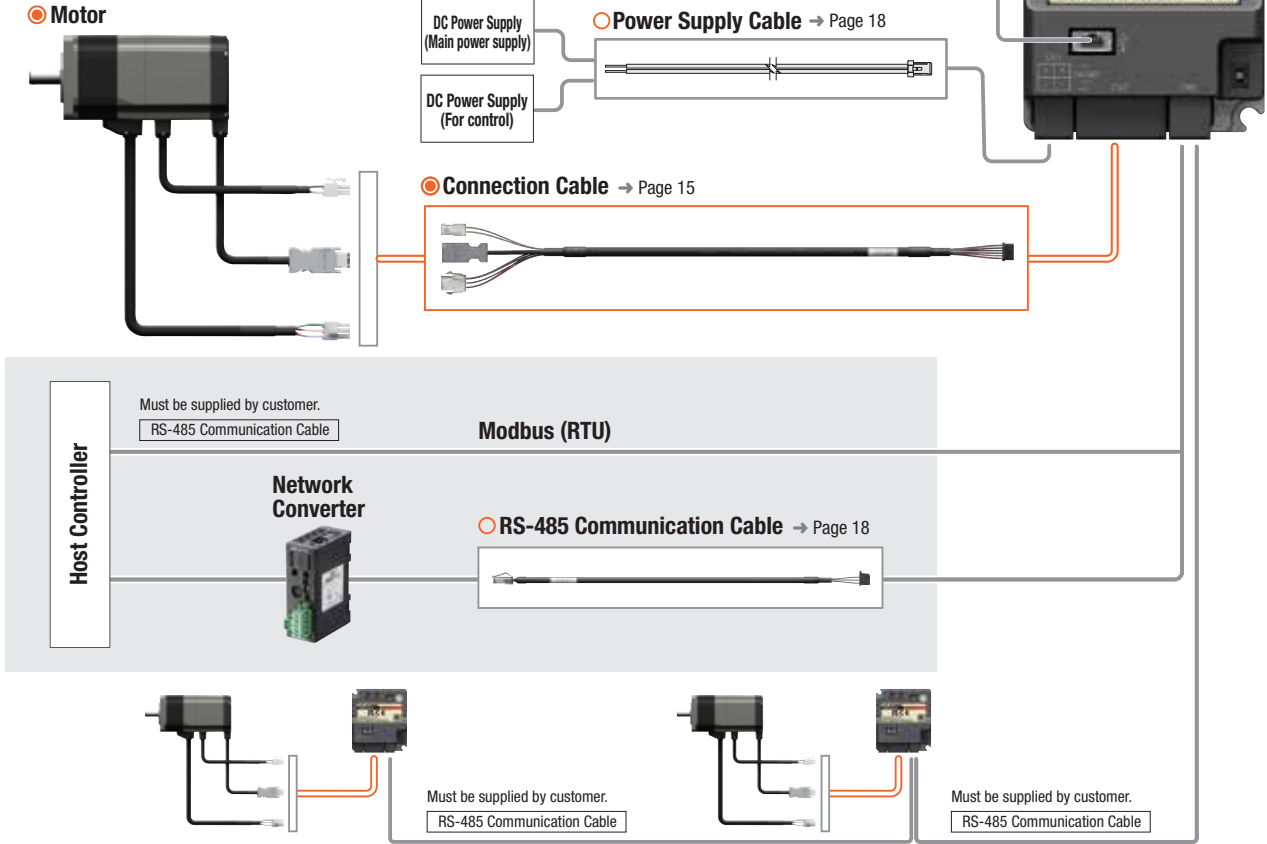
•RS-485 Communication: Preparing a connector separately is necessary. When connecting to a network converter, we provide an optional cable. For the connector part number, refer to the dimensions of each cable or the operating manual.

Support Software **MEXEO2**



● The support software **MEXEO2** can be downloaded from the Oriental Motor website.

Must be supplied by customer.
USB Cable



● Standard Type Electromagnetic-Brake Motor Combined with Pulse Input Type with RS-485 Communication Type mini Driver

Motors, drivers, and connection cables / flexible connection cables must be ordered separately.

- Required for operation
- Optional accessory

● Driver

Note

The driver does not come with connectors for motors, power supplies, I/O signals, or for RS-485 communication.

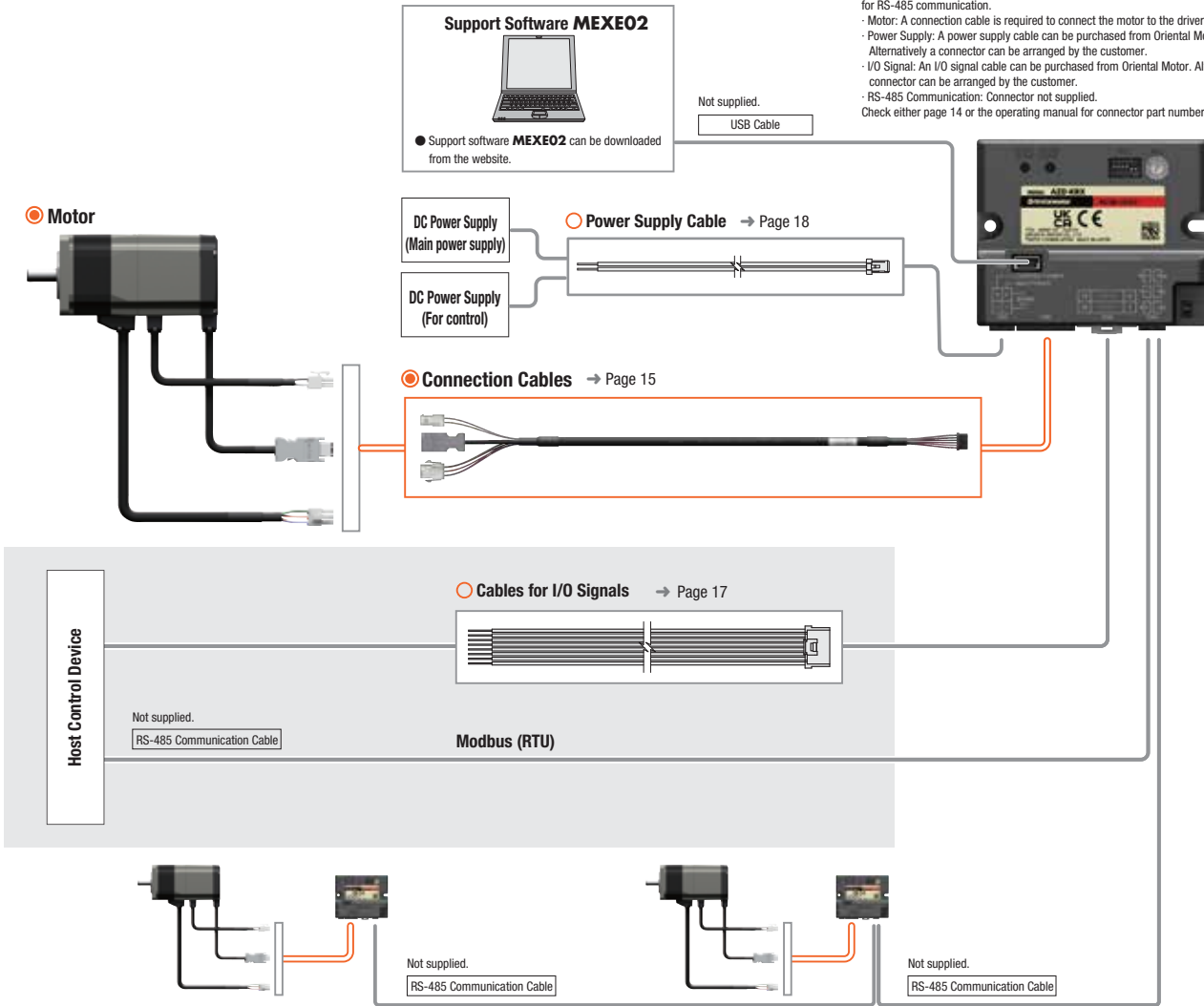
· Motor: A connection cable is required to connect the motor to the driver.

· Power Supply: A power supply cable can be purchased from Oriental Motor. Alternatively a connector can be arranged by the customer.

· I/O Signal: An I/O signal cable can be purchased from Oriental Motor. Alternatively a connector can be arranged by the customer.

· RS-485 Communication: Connector not supplied.

Check either page 14 or the operating manual for connector part numbers.



Product Number

AZD - K R 2 D

① ② ③ ④ ⑤

| | | |
|---|--------------------|--|
| ① | Driver Type | AZD: AZ Series Driver |
| ② | Power Supply Input | K: 24 VDC/48 VDC |
| ③ | Driver Figure | R: Compact |
| ④ | Reference Number | |
| ⑤ | Type | ED: EtherCAT Drive Profile-Compatible EP: EtherNet/IP-Compatible PN: PROFINET-Compatible D: RS-485 Communication Type X: Pulse Input Type with RS-485 Communication |

Product Line

● EtherCAT Drive Profile-Compatible

| Product Name | List Price |
|-----------------|------------|
| AZD-KRED | \$557.00 |



● PROFINET-Compatible

| Product Name | List Price |
|-----------------|------------|
| AZD-KRPN | \$557.00 |



● Pulse Input Type with RS-485 Communication

| Product Name | List Price |
|----------------|------------|
| AZD-KRX | \$493.00 |



● EtherNet/IP-Compatible

| Product Name | List Price |
|-----------------|------------|
| AZD-KREP | \$557.00 |



● RS-485 Communication Type

| Product Name | List Price |
|-----------------|------------|
| AZD-KR2D | \$430.00 |



List of Combinations

| Product | Type | Product Name |
|---------|------------------------|---|
| Motor | Standard Type | AZM14AK, AZM15AK AZM24AK, AZM26AK AZM46 <input type="checkbox"/> K <input type="checkbox"/> AZM48A <input type="checkbox"/> K <input type="checkbox"/> AZM66 <input type="checkbox"/> K <input type="checkbox"/> AZM69 <input type="checkbox"/> K <input type="checkbox"/> |
| | TS Geared Type | AZM46 <input type="checkbox"/> K-TS <input type="checkbox"/> <input type="checkbox"/> AZM66 <input type="checkbox"/> K-TS <input type="checkbox"/> <input type="checkbox"/> |
| | FC Geared Type | AZM46 <input type="checkbox"/> K-FC <input type="checkbox"/> <input type="checkbox"/> A AZM66 <input type="checkbox"/> K-FC <input type="checkbox"/> <input type="checkbox"/> A |
| | PS Geared Type | AZM24AK-PS <input type="checkbox"/> AZM46 <input type="checkbox"/> K-PS <input type="checkbox"/> AZM66 <input type="checkbox"/> K-PS <input type="checkbox"/> |
| | HPG Geared Type | AZM46 <input type="checkbox"/> K-HP <input type="checkbox"/> <input type="checkbox"/> AZM66 <input type="checkbox"/> K-HP <input type="checkbox"/> <input type="checkbox"/> |
| | Harmonic Geared Type | AZM24AK-HS <input type="checkbox"/> AZM46 <input type="checkbox"/> K-HS <input type="checkbox"/> AZM66 <input type="checkbox"/> K-HS <input type="checkbox"/> |

+

| Product | Type | Product Name |
|---------|--|-----------------|
| Driver | EtherCAT Drive Profile-Compatible | AZD-KRED |
| | EtherNet/IP-Compatible | AZD-KREP |
| | PROFINET-Compatible | AZD-KRPN |
| | RS-485 Communication Type | AZD-KR2D |
| | Pulse Input Type with RS-485 Communication | AZD-KRX |

+

| Product | Type | Product Name | |
|--|---------------------------------------|---------------------------|--|
| Connection Cable / Flexible Connection Cable | For AZM14, AZM15, AZM24, AZM26 | Connection Cable | CCM <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Z2AAF |
| | | Flexible Connection Cable | CCM <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Z2AAR |
| | For AZM46, AZM48, AZM66, AZM69 | Connection Cable | For Motor / Encoder: CCM <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Z2ABF For Motor / Encoder / Electromagnetic Brake: CCM <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Z2ACF |
| | | Flexible Connection Cable | For Motor / Encoder: CCM <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Z2ABR For Motor / Encoder / Electromagnetic Brake: CCM <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Z2ACR |

● A code or a number indicating either one of the followings is entered where the box is located within the product name.

- : Output Shaft Shape
- : Additional Function
- : Motor Cable Type
- : Gear Ratio
- : Cable Outlet Direction
- : Output Shaft Type
- : Cable Length

Driver Specifications



| Driver Product Name | | AZD-KRED | AZD-KREP | AZD-KRPN | AZD-KR2D | AZD-KRX |
|----------------------|-----------------------------|--|-------------|----------|--|--------------------------------------|
| Main Power Supply | Rated Voltage | · 24 VDC ± 5% · 48 VDC ± 5% | | | | |
| | Input Current*1 | AZM14: 0.4A, AZM15: 0.5A, AZM24: 1.4A, AZM26: 1.4A AZM46: 1.6A, AZM48: 2.1A, AZM66: 3.7A, AZM69: 3.5A DGM60: 1.4A, DGM85: 1.6A, DGM130: 3.7A, DGB85: 1.6A, DGB130: 3.7A DR20: 0.4A, DR28: 1.3A, DRSM42: 1.5A, DRSM60: 2.6A EH3: 0.4A, EH4: 1.4A, LM2: 3.7A, LM4: 3.7A | | | | |
| | Allowable Operating Voltage | 24 VDC Input: 20 VDC to 32 VDC (22.8 VDC to 32 VDC)*2 48 VDC Input: 40 VDC to 55 VDC | | | | |
| Control Power Supply | Rated Voltage | · 24 VDC ± 5% · 48 VDC ± 5% | | | | |
| | Input Current | 0.15 A (0.4 A)*3 | | | | |
| | Allowable Operating Voltage | 24 VDC Input: 20 VDC to 32 VDC (22.8 VDC to 32 VDC)*2 48 VDC Input: 40 VDC to 55 VDC | | | | |
| Interface | Pulse Input | - | | | - 2 Points, Photocoupler - Maximum Input Pulse Frequency Line Driver: 1 MHz (50% duty) Open Collector: 250 kHz (50% duty) | |
| | Control Input | 24 VDC ± 10% 2 Points, Photocoupler | | - | | 4.5–32 VDC 5 Points, Photocoupler |
| | Control Output | - | | | 4.5–32 VDC 3 Points, Photocoupler/ Open Collector | |
| | Field Network | EtherCAT | EtherNet/IP | PROFINET | RS-485 Communication | RS-485 Communication |

*1 The value of the input current depends on the motor used in combination.

*2 The values in parentheses () indicate the specifications when connected to the electromagnetic brake motor.

*3 The value in parentheses () indicates the specification when connected to the electromagnetic brake motor. **AZM46** is 0.23 A.

Driver Functions

● EtherCAT Drive Profile-Compatible

| Driver Product Name | | AZD-KRED |
|-------------------------------|--|-----------|
| Remote I/O | Input | 16 Points |
| | Output | 16 Points |
| Operation Mode | Profile Position Mode (PP) | |
| | Profile Velocity Mode (PV) | |
| | Return-to-Home Mode (HM) | |
| | Cyclic Synchronous Position Mode (CSP) | |
| | Cyclic Synchronous Velocity Mode (CSV) | |
| Function | Touch Probe (Position Latch) Function | |
| Settings Tool | Support Software MEXE02 | |
| Coordinates Management Method | Battery-free Absolute System | |
| Monitor/Information | As shown in the table below. | |
| Alarm | ○ | |

● EtherNet/IP-Compatible, PROFINET-Compatible, RS-485 Communication Type

| Driver Product Name | | AZD-KREP AZD-KRPN | AZD-KR2D | AZD-KRX |
|---------------------------------|---|---|----------|--------------|
| Number of Positioning Data Sets | | 256 Points | | 256 Points*1 |
| Remote I/O | Input | 16 Points | | |
| | Output | 16 Points | | |
| Setting Tool | | Support Software MEXE02 | | |
| Coordinates Management Method | | Battery-Free Absolute System | | |
| Operation | Operation Method | Positioning Operation | ○ | |
| | | Positioning Push-Motion Operation*2 | ○ | |
| | Linked Operation | Independent Operation | ○ | |
| | | Sequential Operation | ○ | |
| | | Multi-Speed Operation (Continuous Sequential Operation) | ○ | |
| | Sequence Control | Loop Operation (Repeating) | ○ | |
| | | Event Jump Operation | ○ | |
| | Speed Control Operation (Continuous Operation) | | ○ | |
| | Return-To-Home Operation | Return-To-Home Operation*3 | ○ | |
| | | High-Speed Return-to-Home Operation | ○ | |
| JOG Operation | | ○ | | |
| Monitor and Information | Waveform Monitoring | | ○ | |
| | Overload Detection | | ○ | |
| | Overheat Detection (Motor and driver) | | ○ | |
| | Position and Speed Information | | ○ | |
| | Temperature Detection (Motor and Driver) | | ○ | |
| | Motor Load Factor | | ○ | |
| | Distance Traveled/Integrating Distance Traveled | | ○ | |
| Alarm | | ○ | | |

*1 This can be used via the support software **MEXE02**.

*2 The push-motion operation cannot be operated with the geared motors and the Rotary Actuators **DGII** Series.

*3 The return-to-home operation using direct I/O is not available.

■ Communication Specifications

● EtherCAT

| | |
|----------------------------------|---|
| Communication Protocol | IEC 61158 Type12 |
| Physical Layer/Protocol | 100 BASE-TX (IEEE 802.3) |
| Baud Rate | 100 Mbps |
| Communication Cycle | Free Run Mode: 1 ms min. SM2 Event Synchronous Mode: 1 ms min. DC Mode: 0.25 ms, 0.5 ms, 1 ms, 2 ms, 3 ms, 4 ms, 5 ms, 6 ms, 7 ms, 8 ms |
| Communication Port/ Connector | RJ45×2 (Shield-compatible) ECAT IN: EtherCAT Input ECAT OUT: EtherCAT Output |
| Topology | Daisy Chan (Max. 65,535 nodes) |
| Process Data | Variable PDO Mapping |
| Sync Manager | SM0: Mailbox Output SM1: Mailbox Input SM2: Process Data Output SM3: Process Data Input |
| Mailbox (CoE) | Emergency Message SDO Request SDO Response SDO Information |
| Synchronous Modes | Free Run Mode (Asynchronous) SM2 Event Synchronous Mode DC Mode (SYNCO Event Synchronous) |
| Device Profile | IEC 61800-7 CiA402 Drive Profile |

● EtherNet/IP

| | | |
|---------------------------|---|-----------------------------|
| Communication Protocol | EtherNet/IP (Complies with CT18) | |
| Vendor ID | 187: Oriental Motor Company | |
| Device Type | 43: Generic Device | |
| Baud Rate | 10/100 Mbps (Autonegotiation) | |
| Communication Mode | Full Duplex/Half Duplex (Autonegotiation) | |
| Cable Specifications | Shielded Twisted-Pair (STP) Cable Stroke/Cross, Category 5e min. Recommended | |
| Bytes | Output (Scanner → driver) | 40 bytes |
| | Input (Driver → scanner) | 56 bytes |
| Implicit Communication | Compatible Connections | 2 |
| | Connection Type | Exclusive Owner, Input Only |
| | Communication Cycle (RPI) | 1~3200 ms |
| | Connection Type (Scanner → driver) | Point-to-Point |
| | Connection Type (Driver → scanner) | Point-to-Point, Multicast |
| | Data Reflection Trigger | Cyclic |
| IP Address Setting Method | IP Address Setting Switch, Parameter, DHCP | |
| Compatible Topologies | Star, Linear, Ring (Device Level Ring) | |

● PROFINET

| | | |
|-------------------------|---|---------|
| Communication Protocol | PROFINET IO Ver.2.4 | |
| Vendor ID | 0x33E: ORIENTAL MOTOR | |
| Baud Rate | 100 Mbps (Autonegotiation) | |
| Communication Mode | Full Duplex (Autonegotiation) | |
| Cable Specifications | Shielded Twisted-Pair (STP) Cable Stroke/Cross, Category 5e min. Recommended | |
| Communication Connector | RJ45×2 (Shield-compatible) | |
| Conformance Class | B | |
| RT/IRT | RT | |
| NetLoad Class | I | |
| Supported Protocols | DCP, LLDP, SNMP, MRP | |
| Bytes | Output (Host system → driver) | 40 byte |
| | Input (Driver → host system) | 56 byte |
| Compatible Topologies | Star, Tree, Line, Ring | |

● RS-485 Communication

| | |
|----------------------------|---|
| Protocol | Modbus RTU Mode |
| Electrical Characteristics | EIA-485 Based, Straight Cable Use a shielded twisted pair cable (TIA/EIA-568B CAT5e or higher is recommended) and keep the total wiring distance including extension to 50 m (164 ft.) or less.* |
| Communication Mode | Half duplex, asynchronous communication (data: 8 bits, stop bit: 1 bit or 2 bits, parity: none, even, or odd) |
| Transmission Rate | Select either from 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, or 230400 bps. |
| Connection Units | Up to 31 drivers can be connected to a single programmable controller (master device). |

*If the motor cable or power supply cable generates an undesirable amount of noise depending on the wiring or configuration, shield the cable or install a ferrite core.

■ General Specifications

| | | AZD-KRED, AZD-KREP AZD-KRPN, AZD-KRX | AZD-KR2D |
|---------------------------|---------------------|---|----------|
| Degree of Protection | | IP20 | IP10 |
| Operating Environment | Ambient Temperature | 0 to +50°C (+32 to +122°F) (Non-freezing) | |
| | Ambient Humidity | 85% or less (Non-condensing) | |
| | Altitude | Up to 1000 m (3300 ft.) above sea level | |
| | Atmosphere | No corrosive gases or dust. The product should not be exposed to water, oil or other liquids. | |
| Storage Conditions | Ambient Temperature | -25 to +70°C (-13 to +158°F) (Non-freezing) | |
| | Ambient Humidity | 85% or less (Non-condensing) | |
| Transportation Conditions | Altitude | Up to 3000 m (10000 ft.) above sea level | |
| | Atmosphere | No corrosive gases or dust. The product should not be exposed to water, oil or other liquids. | |

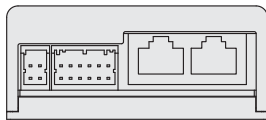
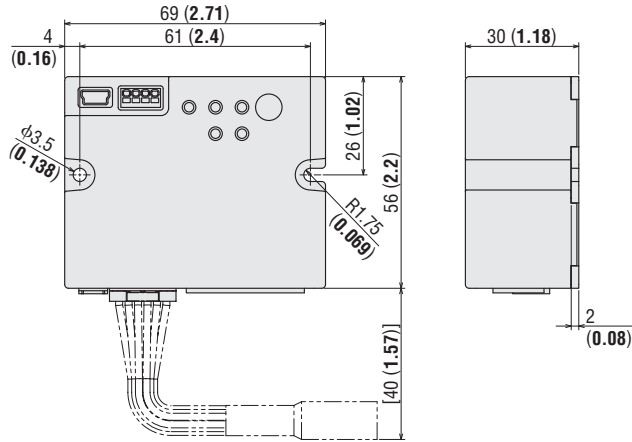
Note

- When measuring insulation resistance or performing dielectric strength test, disconnect the motor and driver.
Also, do not perform these tests on the ABZO Sensor (Absolute Sensor) part of the motor.

Dimensions Unit: mm (in.)

2D & 3D CAD

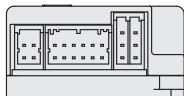
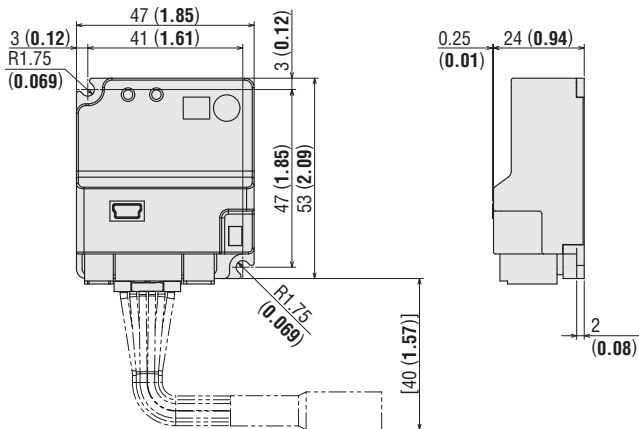
| Type | Product Name | Mass kg (lb.) | 2D CAD |
|-----------------------------------|-----------------|------------------|--------|
| EtherCAT Drive Profile-Compatible | AZD-KRED | 0.11 (0.24) | B1541 |
| EtherNet/IP-Compatible | AZD-KREP | | |
| PROFINET-Compatible | AZD-KRPN | | |



- Applicable Connector
Power Connector (CN1)
Connector Housing: 1-1827864-2 (TE Connectivity)
Contact: 1827589-2 (TE Connectivity)

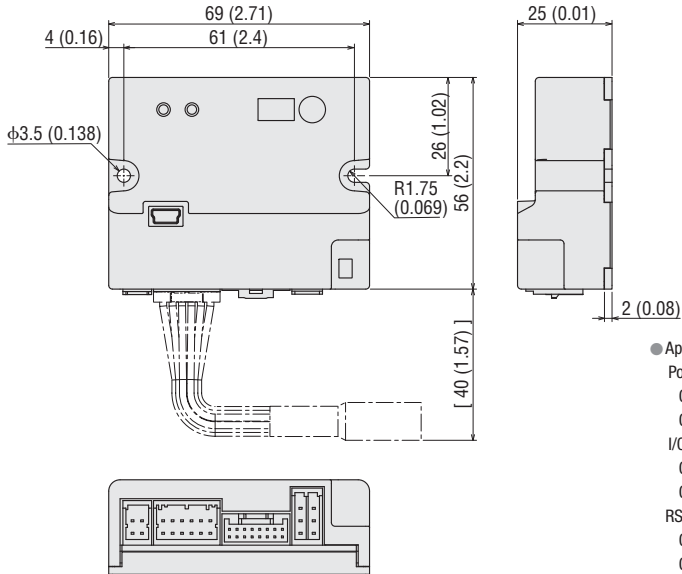
2D & 3D CAD

| Type | Product Name | Mass g (oz.) | 2D CAD |
|---------------------------|-----------------|-----------------|--------|
| RS-485 Communication Type | AZD-KR2D | 56 (1.98) | B1538 |



- Applicable Connectors
Power Connector (CN1)
Connector Housing: 1-1827864-2 (TE Connectivity)
Contact: 1827589-2 (TE Connectivity)
RS-485 Communication Connector (CN3)
Connector Housing: 1-1827579-1 (TE Connectivity)
Contact: 1827588-2 (TE Connectivity)

| Type | Product Name | Mass g (oz.) | 2D CAD |
|--|----------------|-----------------|--------|
| Pulse Input Type with RS-485 Communication | AZD-KRX | 84 (2.96) | B1549 |



● Applicable Connectors

Power Connector (CN1)

Connector Housing: 1-1827864-2 (TE Connectivity)

Contact: 1827589-2 (TE Connectivity)

I/O signal connector (CN3)

Connector Housing: 501646-1600 (molex)

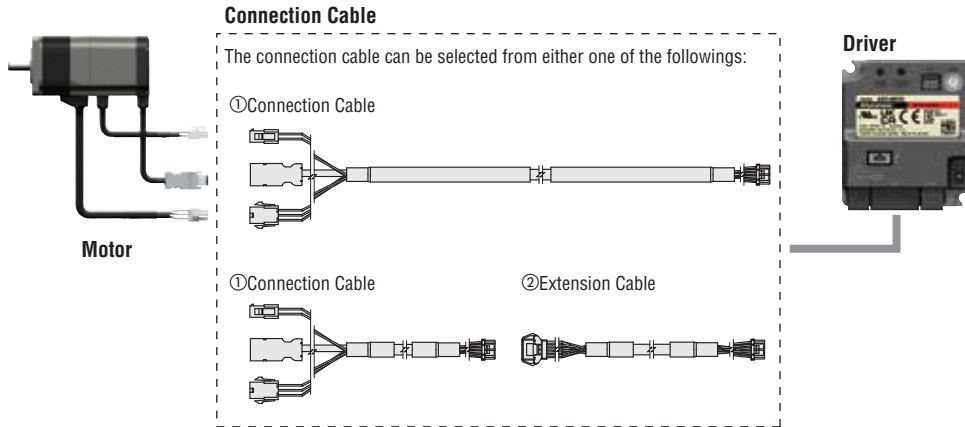
Contact: 501647-1100 (molex)

RS-485 Communication Connector (CN4)

Connector Housing: 1-1827579-1 (TE Connectivity)

Contact: 1827588-2 (TE Connectivity)

Connection Cables



Note

- Up to 3 cables can be used to connect the motor and driver.
- The maximum distance between the motor and driver is 10 m (32.8 ft.).

① Connection Cables / Flexible Connection Cables

These cables are used to connect the motor and the driver. Use the flexible connection cable in applications where the cable is bent and flexed repeatedly.

● Product Line

For **AZM14, AZM15, AZM24, AZM26**

◇ Connection Cables

● For Motor / Encoder

| Length L [m (ft.)] | Product Name | List Price |
|-----------------------|--------------------|------------|
| 0.5 (1.6) | CCM005Z2AAF | \$38.00 |
| 1 (3.3) | CCM010Z2AAF | \$38.00 |
| 3 (9.8) | CCM030Z2AAF | \$63.00 |
| 5 (16.4) | CCM050Z2AAF | \$110.00 |
| 10 (32.8) | CCM100Z2AAF | \$178.00 |



◇ Flexible Connection Cables

● For Motor / Encoder

| Length L [m (ft.)] | Product Name | List Price |
|-----------------------|--------------------|------------|
| 0.5 (1.6) | CCM005Z2AAR | \$85.00 |
| 1 (3.3) | CCM010Z2AAR | \$85.00 |
| 3 (9.8) | CCM030Z2AAR | \$112.00 |
| 5 (16.4) | CCM050Z2AAR | \$143.00 |
| 10 (32.8) | CCM100Z2AAR | \$238.00 |



For **AZM46, AZM48, AZM66, AZM69**

◇ Connection Cables

● For Motor / Encoder

| Length L [m (ft.)] | Product Name | List Price |
|-----------------------|--------------------|------------|
| 0.5 (1.6) | CCM005Z2ABF | \$38.00 |
| 1 (3.3) | CCM010Z2ABF | \$38.00 |
| 3 (9.8) | CCM030Z2ABF | \$63.00 |
| 5 (16.4) | CCM050Z2ABF | \$110.00 |
| 10 (32.8) | CCM100Z2ABF | \$178.00 |



● For Motor / Encoder / Electromagnetic Brake

| Length L [m (ft.)] | Product Name | List Price |
|-----------------------|--------------------|------------|
| 0.5 (1.6) | CCM005Z2ACF | \$53.00 |
| 1 (3.3) | CCM010Z2ACF | \$53.00 |
| 3 (9.8) | CCM030Z2ACF | \$83.00 |
| 5 (16.4) | CCM050Z2ACF | \$136.00 |
| 10 (32.8) | CCM100Z2ACF | \$216.00 |



◇ Flexible Connection Cables

● For Motor / Encoder

| Length L [m (ft.)] | Product Name | List Price |
|-----------------------|--------------------|------------|
| 0.5 (1.6) | CCM005Z2ABR | \$85.00 |
| 1 (3.3) | CCM010Z2ABR | \$85.00 |
| 3 (9.8) | CCM030Z2ABR | \$112.00 |
| 5 (16.4) | CCM050Z2ABR | \$143.00 |
| 10 (32.8) | CCM100Z2ABR | \$238.00 |



● For Motor / Encoder / Electromagnetic Brake

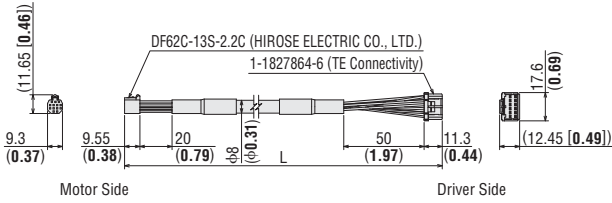
| Length L [m (ft.)] | Product Name | List Price |
|-----------------------|--------------------|------------|
| 0.5 (1.6) | CCM005Z2ACR | \$115.00 |
| 1 (3.3) | CCM010Z2ACR | \$115.00 |
| 3 (9.8) | CCM030Z2ACR | \$153.00 |
| 5 (16.4) | CCM050Z2ACR | \$193.00 |
| 10 (32.8) | CCM100Z2ACR | \$314.00 |



● Dimensions Unit: mm (in.)

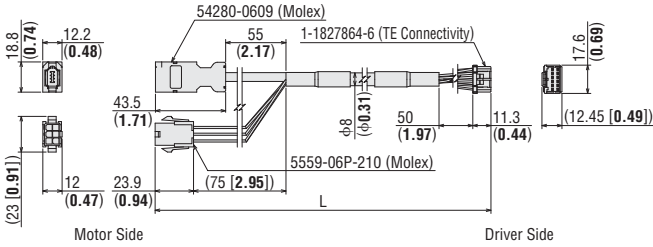
For **AZM14, AZM15, AZM24, AZM26**

● For Motor / Encoder

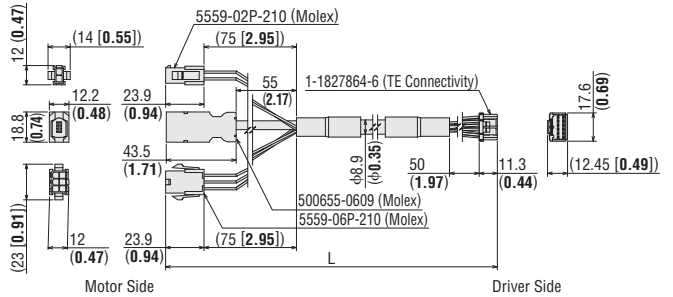


For **AZM46, AZM48, AZM66, AZM69**

● For Motor / Encoder



● For Motor / Encoder / Electromagnetic Brake



② Extension Cables / Flexible Extension Cables Driver Side

These are cables to provide an extension between the connection cable and the driver. When extending the connection, keep the overall cable length at 10 m (32.8 ft.) or less.

Use the flexible extension cable in applications where the cable is bent and flexed repeatedly.

● Product Line

◇ Extension Cables

| Length L [m (ft.)] | Product Name | List Price |
|-----------------------|---------------------|------------|
| 1 (3.3) | CCM010Z2ADFT | \$71.00 |
| 3 (9.8) | CCM030Z2ADFT | \$92.00 |
| 5 (16.4) | CCM050Z2ADFT | \$110.00 |

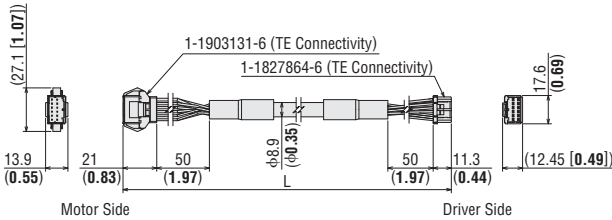


◇ Flexible Extension Cables

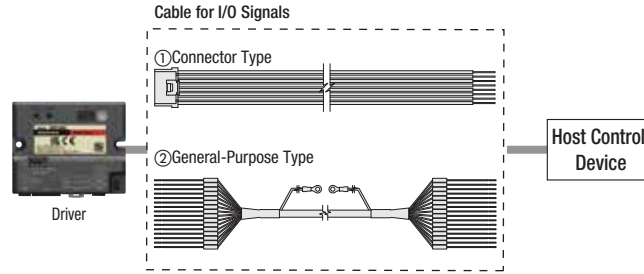
| Length L [m (ft.)] | Product Name | List Price |
|-----------------------|---------------------|------------|
| 1 (3.3) | CCM010Z2ADRT | \$85.00 |
| 3 (9.8) | CCM030Z2ADRT | \$112.00 |
| 5 (16.4) | CCM050Z2ADRT | \$143.00 |



● Dimensions Unit: mm (in.)



■ Cable for I/O Signals



① Connector Type

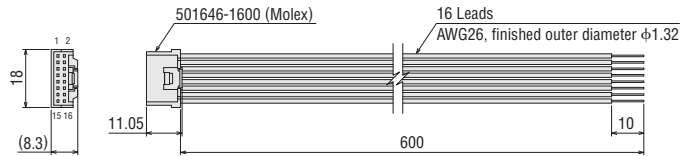
- Unbundled wires on one end



● Product Line

| Product Name | Applicable Drivers | Number of Lead Wire Cores | AWG | List Price |
|------------------|--|---------------------------|-----|------------|
| LCD06Z2BY | Pulse Input Type with RS-485 Communication | 16 | 26 | \$23.00 |

● Dimensions Unit: mm (in.)



② General-Purpose Type

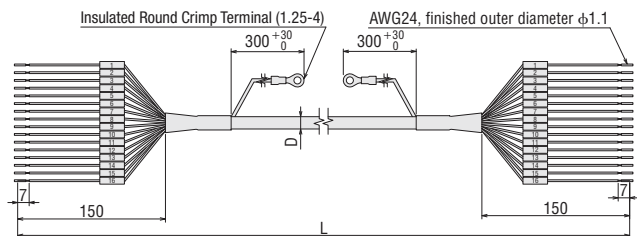
- Shielded cable
- Unbundled wires on both ends
- Easy shield grounding using ground wire with a round terminal
- The number of lead wire cores can be selected to suit the functions that will be used



● Product Line

| Product Name | Length L (m) | Number of Lead Wire Cores | Outer Diameter D (mm) | AWG | List Price |
|--------------------|--------------|---------------------------|-----------------------|---------|------------|
| CC06D005B-1 | 0.5 | 6 | φ5.4 | 24 | \$18.00 |
| CC06D010B-1 | 1 | | | | \$20.00 |
| CC06D015B-1 | 1.5 | | | | \$23.00 |
| CC06D020B-1 | 2 | \$24.00 | | | |
| CC10D005B-1 | 0.5 | 10 | φ6.7 | | \$20.00 |
| CC10D010B-1 | 1 | | | | \$22.00 |
| CC10D015B-1 | 1.5 | | | | \$25.00 |
| CC10D020B-1 | 2 | \$29.00 | | | |
| CC12D005B-1 | 0.5 | 12 | φ7.5 | | \$23.00 |
| CC12D010B-1 | 1 | | | | \$25.00 |
| CC12D015B-1 | 1.5 | | | | \$29.00 |
| CC12D020B-1 | 2 | \$33.00 | | | |
| CC16D005B-1 | 0.5 | 16 | φ7.5 | \$24.00 | |
| CC16D010B-1 | 1 | | | \$28.00 | |
| CC16D015B-1 | 1.5 | | | \$30.00 | |
| CC16D020B-1 | 2 | | | \$33.00 | |

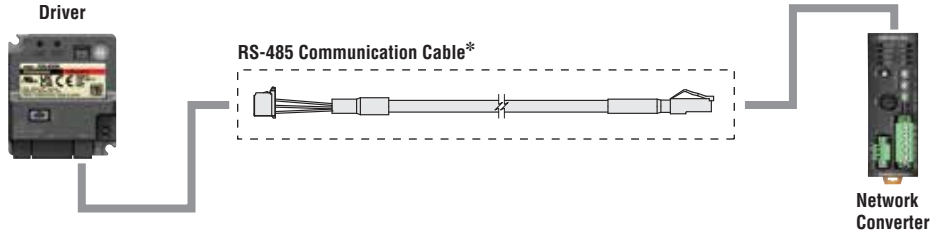
● Dimensions Unit: mm (in.)



- The figure depicts 16 core wires.

RS-485 Communication Cables

These cables are used to connect the driver to a network converter or a robot controller **MRC01**.

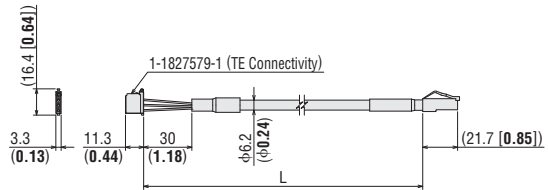


Product Line

| Product Name | Length L [m (ft.)] | List Price |
|-----------------|--------------------|------------|
| CC02FLT6 | 2 (6.6) | \$56.00 |
| CC05FLT6 | 5 (16.4) | \$82.00 |



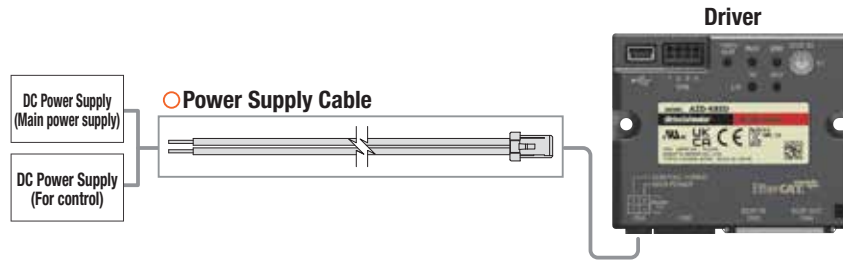
Dimensions Unit: mm (in.)



*This cable cannot be used to connect the drivers together.

Power Supply Cable

These cables are used to connect the driver and the power supply. Connecting with the main power supply and control power supply is easy.

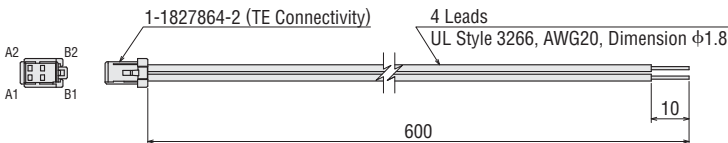


Product Line

| Product Name | List Price |
|------------------|------------|
| LCD06Z2AY | \$18.00 |



Dimensions Unit: mm (in.)



Products Suitable for Mobile Automation

This is a product line having a common concept of battery-drive, compact, and lightweight. Ideal for installing in transportation devices such as autonomous mobile robots and automated guided vehicles, these products contribute to creating an automation line possible to change as desired and achieving the mobile automation, which are further expected in the future.

Brushless Motors

BLV Series R Type

These are DC power input brushless motors that further downsizing and weight reduction are achieved.

Low-speed operation from 1 r/min can be performed. Operation by battery-drive is also available.

- Output Power: 60 W (1/12 HP), 100 W (1/8 HP), 200 W (1/4 HP), 400W (1/2 HP)
- Speed Control Range: 1 to 4000 r/min
- Modbus (RTU) and CANopen Communications Compatible



Specifications are subject to change without notice. This catalog was published in March 2023.

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