

Orientalmotor

α STEP AZ Series Connector Type

Built-in Battery-Free Absolute Sensor

The same features of **AZ** Series,
but now with a single cable.

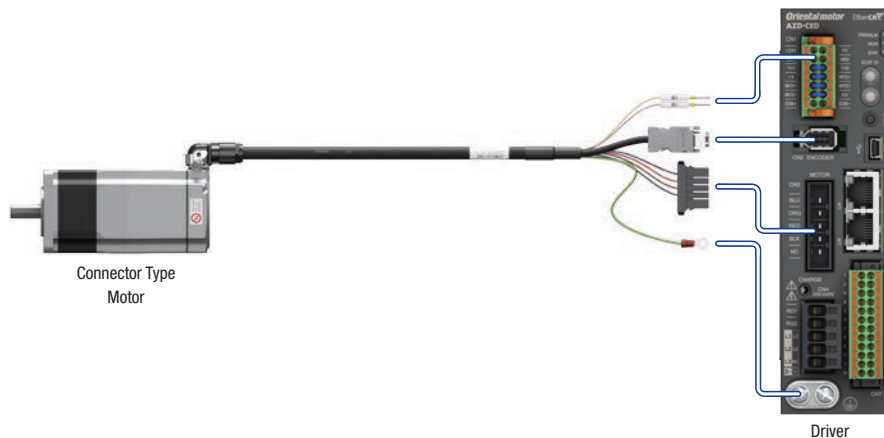


EtherCAT EtherNet/IP PROFINET MECHATROLINK SSCNET III/H Modbus (RTU)

Direct Connection of Motor and Driver

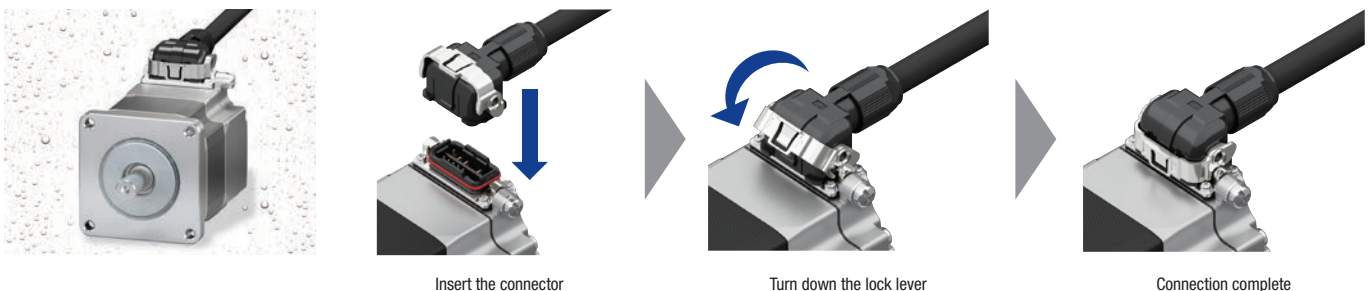
Without an extension cable, a connection of up to 10 m is possible. No extension cable is required.

The wiring process is more efficient thanks to the power line, signal line, electromagnetic brake line and ground wire all being consolidated into one cable.



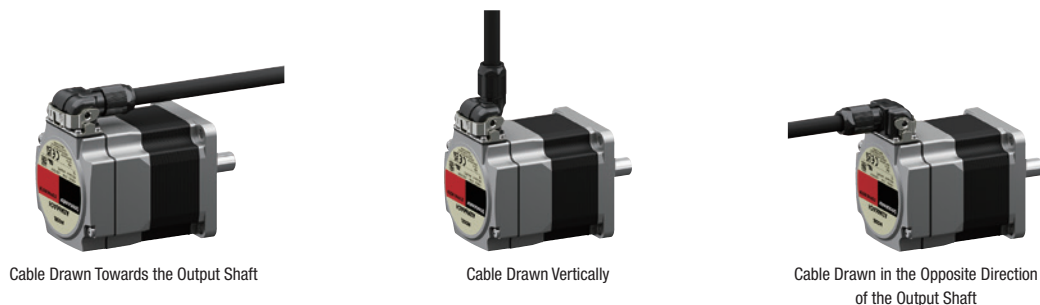
Lock Lever Connector with IP66 Specification

Connecting the cable is easy due to the lock lever that does not require screws.



Three Cable Outlet Directions Can be Selected

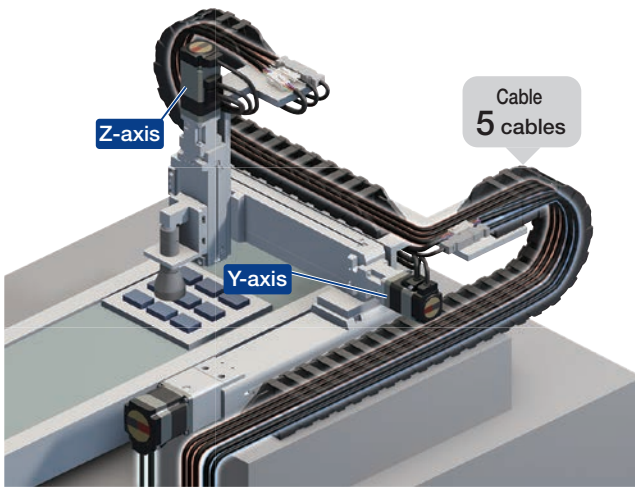
Select from three cable outlet directions. This increases the degree of cable outlet freedom around the motor.



Use of a Single Cable Reduces Routing Work and Smaller Cable Holders

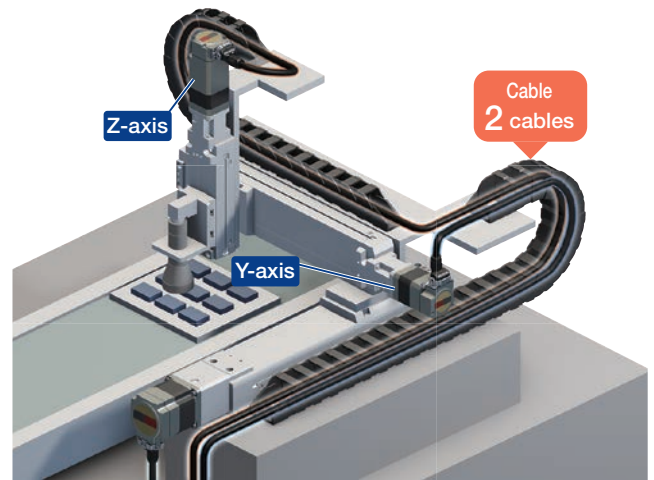
● Conventional Product (Cable type)

Z-axis (Electromagnetic brake motor): 3 cables
Y-axis (Standard motor) : 2 cables



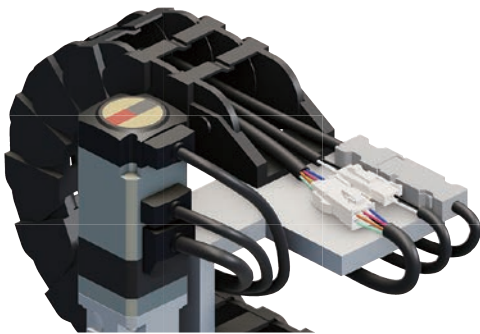
● Connector Type

Z-axis (Electromagnetic brake motor): 1 cable
Y-axis (Standard motor) : 1 cable

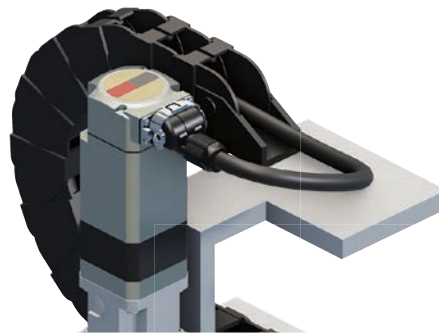


Direct Connection Leads to Quicker Replacement of Motors and Cables

● Conventional Product (Cable type)



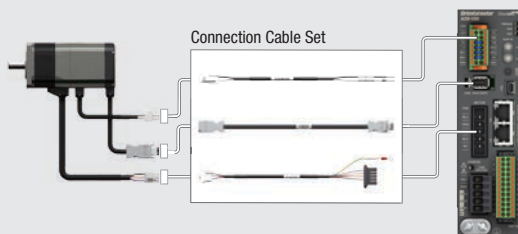
● Connector Type



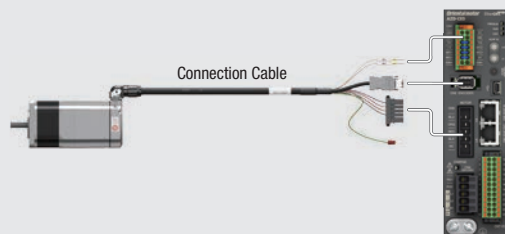
Reference: Comparison of Connection Cable Diameters, Cross-Section Areas and Masses

For electromagnetic brake motor, single-axis driver and flexible connection cable (5 m in length)

● Cable Type



● Connector Type










	Cable Type (3 cables)	Connector Type (1 cable)
Diameter [mm]	<ul style="list-style-type: none"> • Ø8 for motors • Ø6 for electromagnetic brakes • Ø6.5 for encoders 	Ø8.9
Cross-Sectional Area [mm ²]	111.7	62.2
	44.3% reduction	
Mass [kg]	1.19	0.53
	55.5% reduction	

*3 cables: one for motor, one for encoder and one for electromagnetic brake

AZ Series Product Lineup







AC Input

Type		Frame Size [mm]	Reduction Ratio	Permissible Torque [Nm]	Speed Range [r/min]	Backlash [arcmin]	Lost Motion [arcmin]
Standard*1		42	—	0.3 - 0.77	0 - 4500	—	—
		60		1.2, 2			
		85		2, 4			
Low Backlash	TS Geared *2 (Spur gear mechanism) 	42	3.6 - 30	0.65 - 2.3	0 - 833	15 - 45	—
		60		1.8 - 6		10 - 35	
		90		6 - 25		10 - 25	
	Right Angle FC Geared (Face gear mechanism) 	42	7.2 - 30	0.7 - 3	0 - 416	15 - 25	—
		60		2.5 - 10.5		10 - 15	
	PS Geared (Planetary gear mechanism) 	42	5 - 50	1 - 3	0 - 600	15	—
		60		3.5 - 8		7 - 9	
		90		10 - 37		7 - 9	
Non-Backlash	NEW PN Geared (Planetary gear mechanism) 	42	5 - 10	1 - 1.5	0 - 600	—	2 max.
		60		3.5 - 5			
		90		10 - 20			
	Harmonic Geared Type (Harmonic drive)  	42	50, 100	8.3 - 11	0 - 70	—	1.5 max.
		60		23 - 36			0.7 max.
		90		33 - 52			0.7 max.

*1 You can choose the shaft shape from one-sided milling, straight, or with a key. (With key: mounting angle dimension 42mm is only available for **AZM48**)

*2 You can choose the connector direction from three directions (up, front, back) relative to the output shaft.

DC Input

Type		Frame Size [mm]	Reduction Ratio	Permissible Torque [Nm]	Speed Range [r/min]	Backlash [arcmin]	Lost Motion [arcmin]
Standard*1		42	—	0.3 - 0.72	0 - 4000	—	—
		60		1 - 2	0 - 3000		
Low Backlash	TS Geared *2 (Spur gear mechanism) 	42	3.6 - 30	0.65 - 2.3	0 - 833	15 - 45	—
		60		1.8 - 6		10 - 35	
	Right Angle FC Geared (Face gear mechanism) 	42	7.2 - 30	0.7 - 3	0 - 416	15 - 25	—
		60		2.5 - 10.5		10 - 15	
	PS Geared (Planetary gear mechanism) 	42	5 - 50	1 - 3	0 - 600	15	—
		60		3.5 - 8		7 - 9	
Non-Backlash	NEW PN Geared (Planetary gear mechanism) 	42	5 - 10	1 - 1.5	0 - 600	—	2 max.
		60		3.5 - 5			
	Harmonic Geared Type (Harmonic drive) 	42	50, 100	8.3 - 11	0 - 70	—	1.5 max.
		60		23 - 36	0 - 60		0.7 max.

*1 You can choose the shaft shape from one-sided milling, straight, or with a key. (With key: mounting angle dimension 42mm is only available for **AZM48**)

*2 You can choose the connector direction from three directions (up, front, back) relative to the output shaft.

Single-Axis Drivers

Network Compatible Driver

The driver can be controlled directly from the host control device via the FA network.






Modbus (RTU)



AC Input



DC Input

Built-In Positioning Function Type

Set the positioning data in the driver (256 points). Capable of FA network control when a network converter (sold separately) is used.

Modbus (RTU)



AC Input



DC Input

Pulse Input Type with RS-485 Communication

Control the motor from a positioning module (pulse generator). Monitor the motor's position, speed, torque, alarms and temperature via RS-485 communication.



AC Input



DC Input

Pulse Input Type

The motor is controlled from the positioning module (pulse generator).



AC Input



DC Input


mini Drivers

More compact and lightweight than single-axis drivers. They are also compatible with FA network.



Ethernet Type
Modbus (TCP, UDP)



Network Compatible
 EtherCAT   



RS-485 Communication Type
Modbus (RTU)



Pulse Input Type with
 RS-485 Communication

Connection Cables/Flexible Connection Cables

Use a flexible connection cable in applications where the cable is bent and flexed.







Single-Axis Driver for AC Input
 (1 to 10 m)



Single-Axis Driver for DC Input
 (0.5 to 10 m)



For mini Driver
 (0.2 to 10 m)

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What is FLEX?

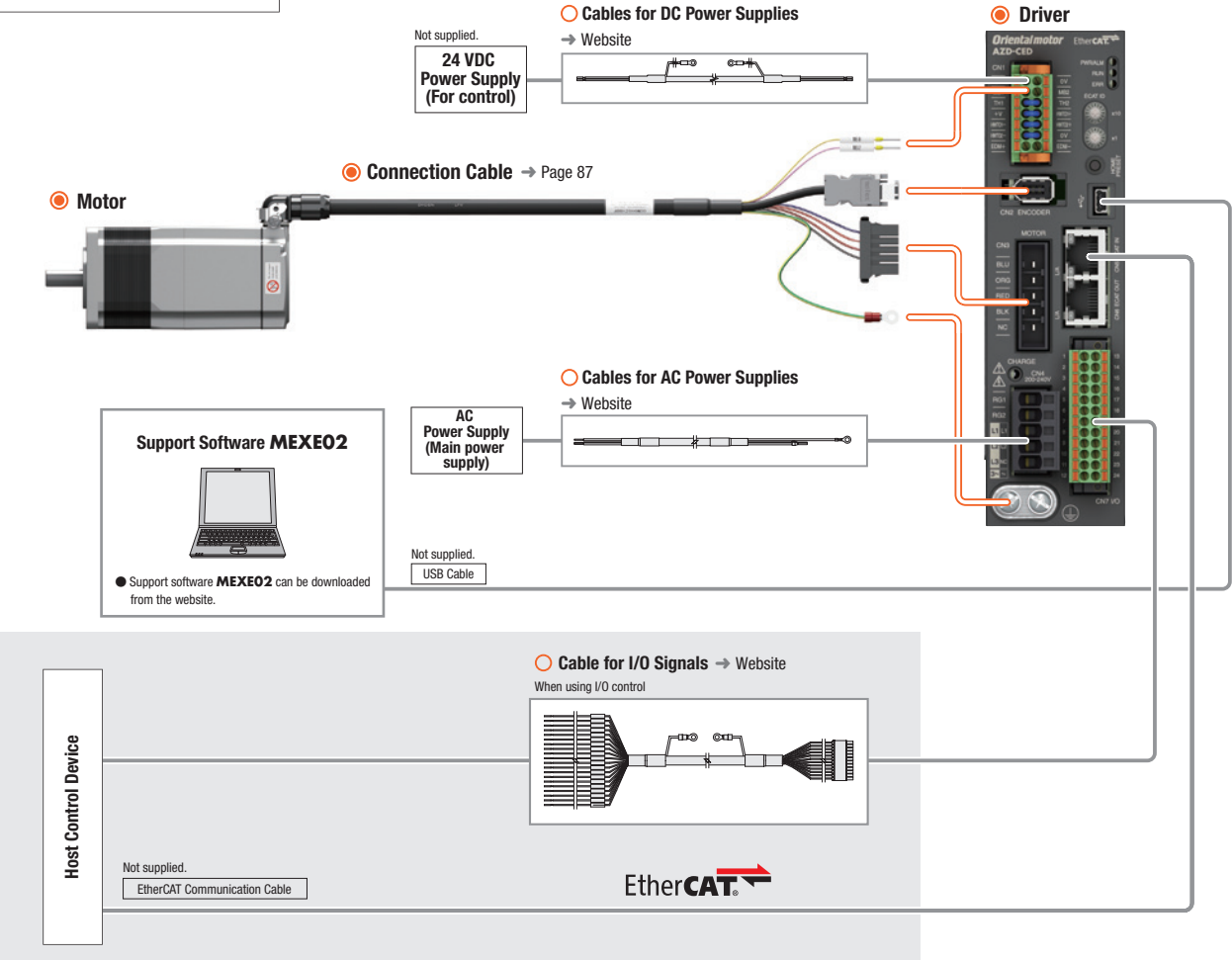
FLEX is the collective name for products that support I/O control, Modbus (RTU) control and FA network control via network converters.

System Configuration

Combination of Connector Type Electromagnetic Brake Motor and Network-Compatible Driver

An example of a configuration using I/O control with EtherCAT-compatible driver or EtherCAT is shown below. Motors, drivers, and connection cables/flexible connection cables must be ordered individually.

- Required for Operation
- Optional Accessory



Example of System Configuration

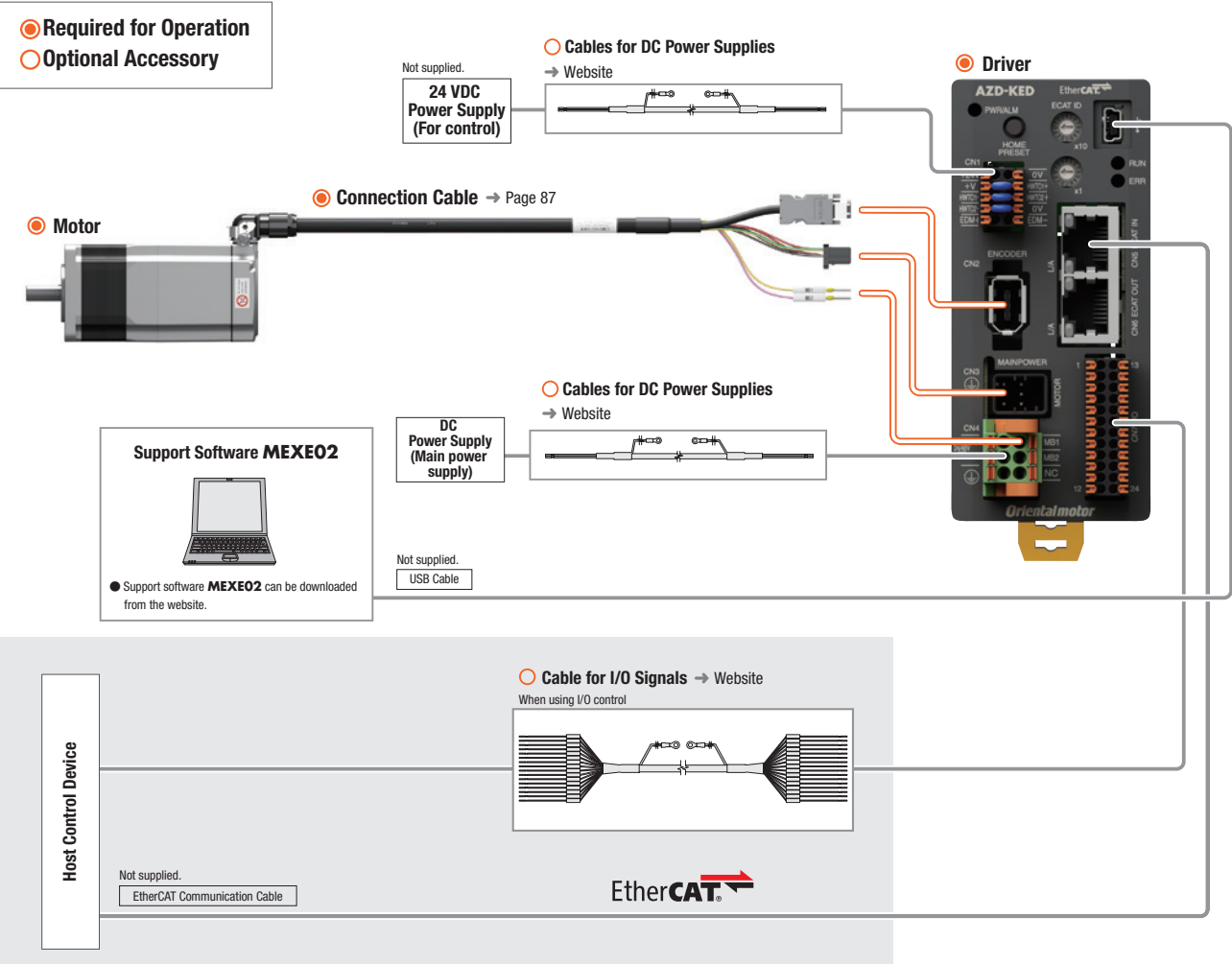
Motor		Driver		Cable	
AZM66MCH		AZD-CED		Connection Cable Cable Outlet Direction Output Shaft Side (1 m)	I/O Signal Cable Connector Type (1 m)
CCM010Z1BFF		CC24D010C-1			

The system configuration shown above is an example. Other combinations are also available.

System Configuration

Combination of Connector Type Electromagnetic Brake Motor and Network-Compatible Driver

An example of a configuration using I/O control with EtherCAT-compatible driver or EtherCAT is shown below. Motors, drivers, and connection cables/flexible connection cables must be ordered individually.



Example of System Configuration

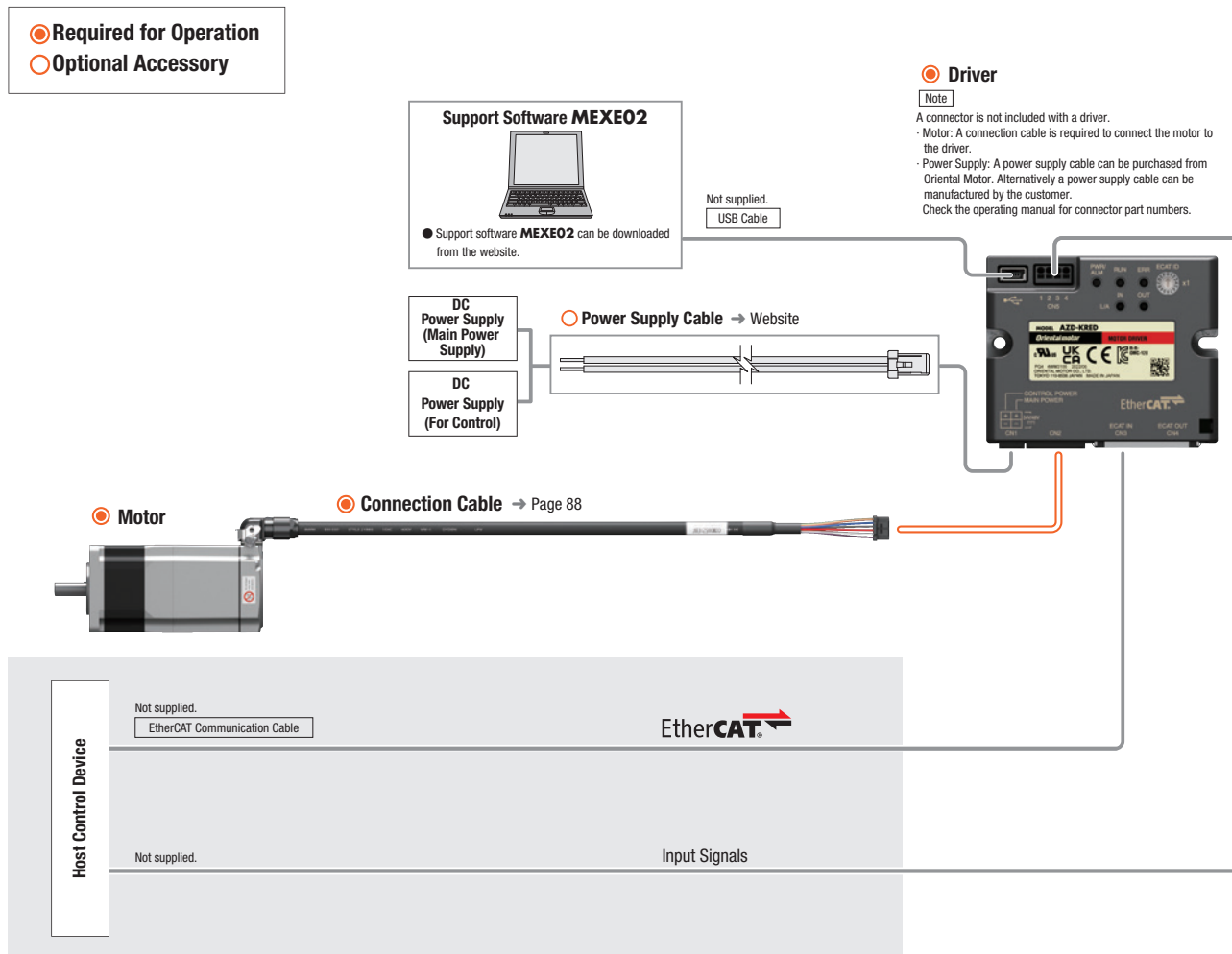
Motor	+	Driver	+	Cable	
				Connection Cable Cable Outlet Direction Output Shaft Side (1 m)	I/O Signal Cable General Purpose Type (1 m)
AZM66MKH		AZD-KED		CCM010Z1DFF	CC16D010B-1

The system configuration shown above is an example. Other combinations are also available.

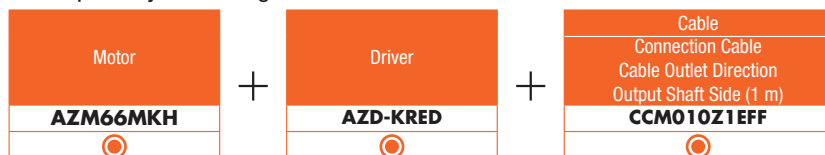
● Combination of Connector Type Electromagnetic Brake Motor and mini Driver Network-Compatible Driver

An example of a configuration using I/O control with EtherCAT-compatible driver or EtherCAT is shown below.

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



● Example of System Configuration



● The system configuration shown above is an example. Other combinations are also available.

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Specifications are subject to change without notice. This catalogue was published in April 2025.

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These products are manufactured at plants certified with the international standards ISO 9001 (for quality assurance) and ISO 14001 (for systems of environmental management).