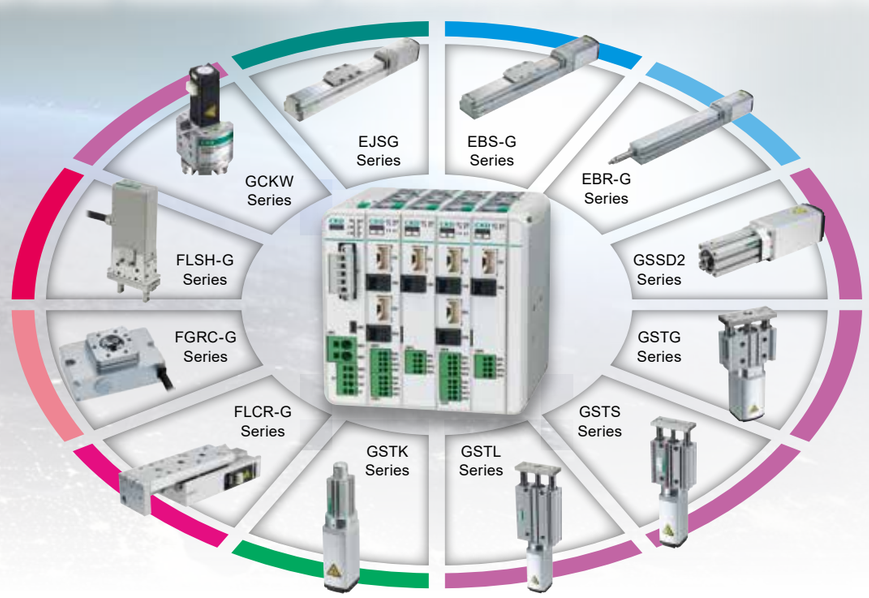
ECMG

Multi Axis Controller

CONTENTS

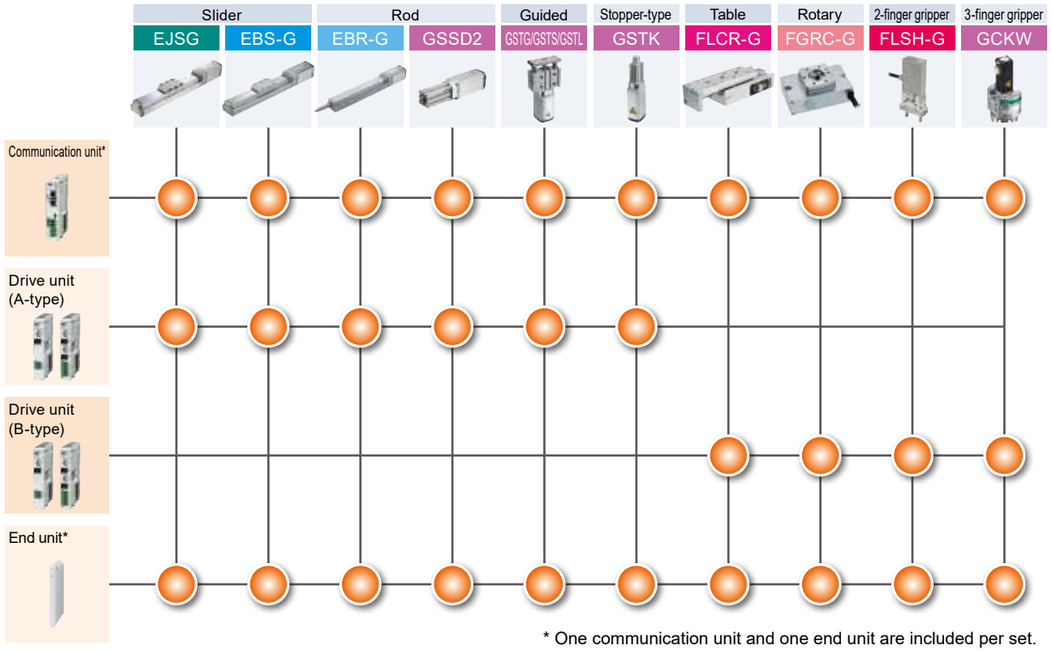
Multi Axis Controller **ECMG** Series

Multi-axis controller that can be connected to units



Connect up to 16 axes, contributing to space saving

List of Compatible Actuators

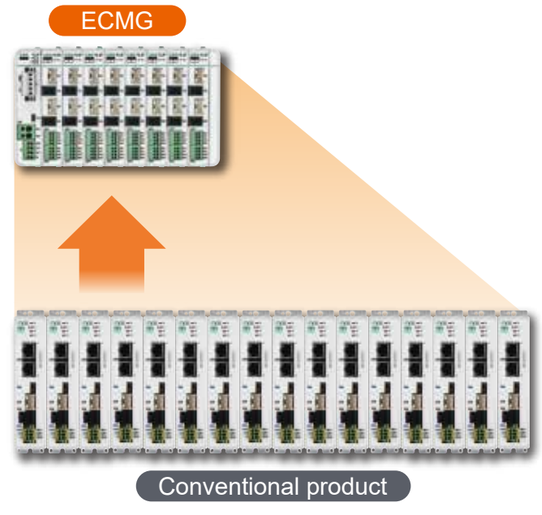


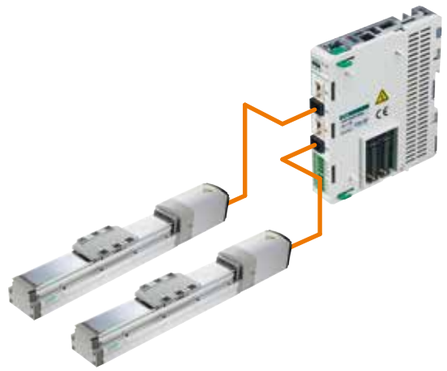
* One communication unit and one end unit are included per set.
Page 542 for details.

Space saving

Connect up to 16 actuators

Supports 2-axis connection per unit. Since 8 units can be connected, up to 16 axes can be connected.
Installation space can be significantly reduced compared to a single-axis controller.

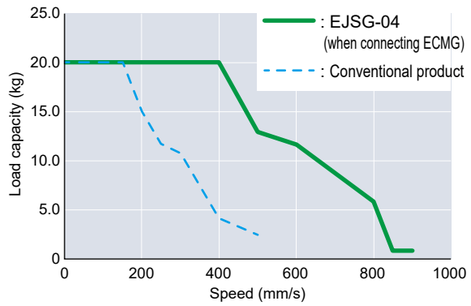




Space saving Productivity improved

Significant improvement in basic performance

Compared to conventional products, the payload and maximum speed have been greatly improved, and acceleration/deceleration also supports 1G. Since a small body size can cover a large load, downsizing of the actuator can be expected.
*Only when connecting EJSG, EBS/EBR-G

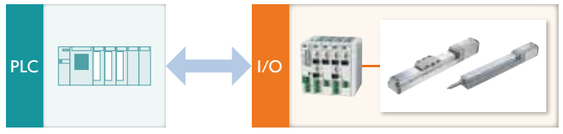


Payload Max. **5** times

Max. Speed Max. **2** times

Compatible Interface

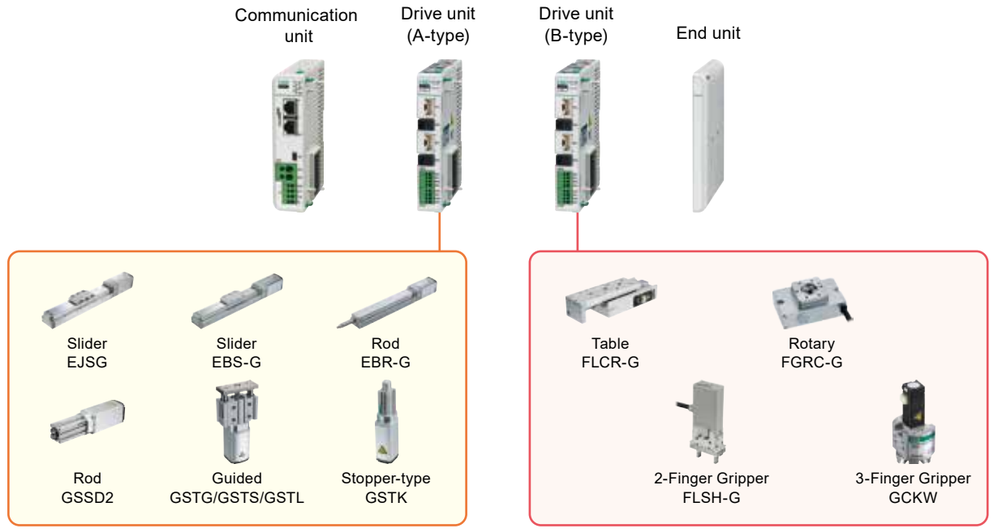
CC-Link EtherNet/IP EtherCAT



Commonization of drive units

Reduced design hours | Reduced man-hours | Reduced stock

Even actuators with different models, sizes, leads, and strokes can be operated with the same drive unit. It is possible to significantly reduce the man-hours for selection and ordering, as well as inventory. Since it is equipped with an automatic recognition function that reads actuator information, the initial setting man-hours can also be reduced.
*The automatic recognition function is only for the drive unit (A-type)



Refer to P. 540 for compatible actuators for each drive unit.

Supports 3 types of motive power supply methods

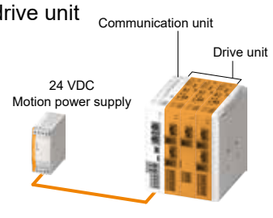
High versatility | Safety & Security

As the number of controller axes increases, the current consumption may exceed the limit. ECMG supports mixed wiring and individual wiring methods, and can be used regardless of the number of axes. The individual wiring method is safe because the motive power can be shut off for each axis.

Batch wiring method

Reduced wiring man-hours

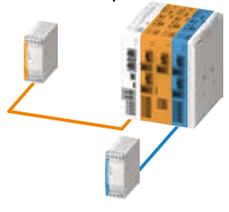
Batch supply of power from the communication unit to each drive unit



Mixed wiring method

No axis limit due to current value

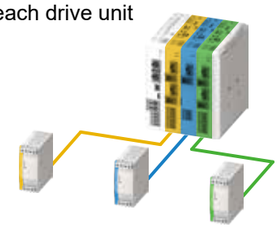
Separately supply motive power only to drive units with high current consumption



Individual wiring method

No axis limit due to current value, ensuring high safety

Directly supply motive power to each drive unit



Direct value mode to move to any position

High versatility | Supports IoT

It can be operated by directly instructing the position, speed, acceleration, deceleration, pushing force, etc., from a host device such as a PLC. The newly added standard direct value mode can control up to 16 axes. Furthermore, since point data can be rewritten from a host device, it is very convenient for setup changes.

Maximum connectable axes by operation mode

Field network	Operation Mode			
	PIO	Simple Direct Value	Standard Direct Value	Full Direct Value
CC-Link	16 axes	16 axes	16 axes	10 axes
EtherCAT	16 axes	16 axes	16 axes	10 axes
EtherNet/IP	16 axes	16 axes	16 axes	10 axes

Configuration Tool "S-Tools" Free of Charge

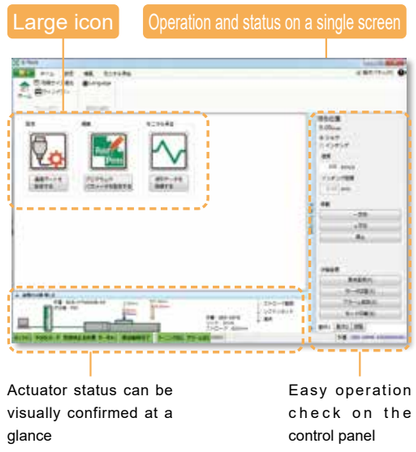
Easy adjustment

The dedicated configuration tool "S-Tools" is available free of charge on our website. It can be used with all ROBODEX Pulse Series products.

CKD YouTube Channel
Please check from your iPad or smartphone.

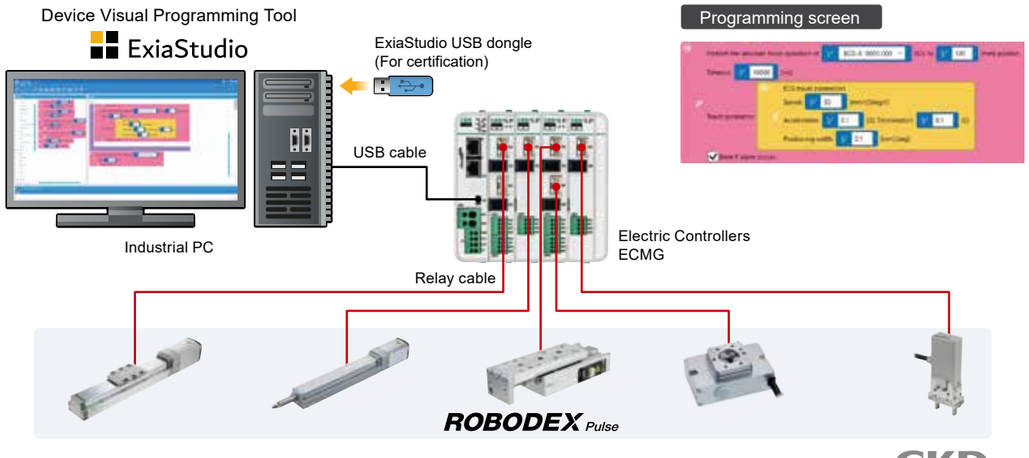
*May not display correctly depending on the smartphone's usage environment.

ECMG Setup Video Now Available!
ROBODEX
Quick Start Guide
(Multi Axis Controller)
ECMG Series
-Startup-

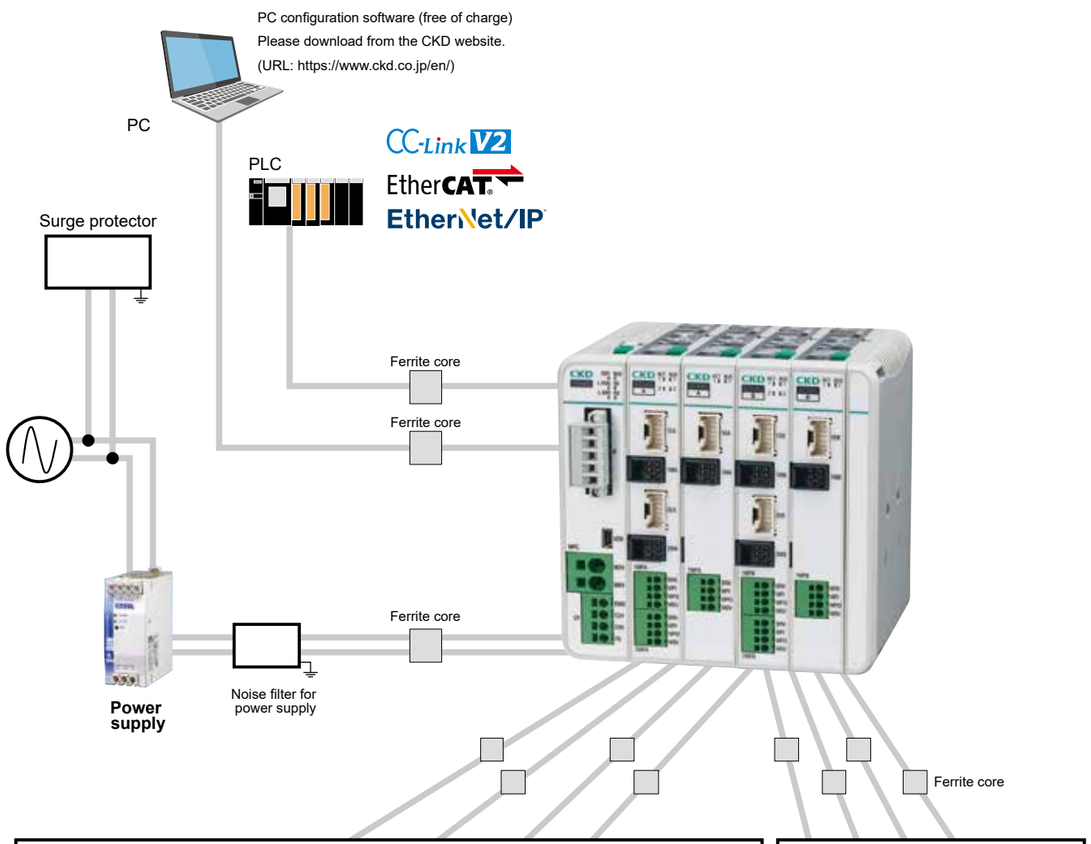


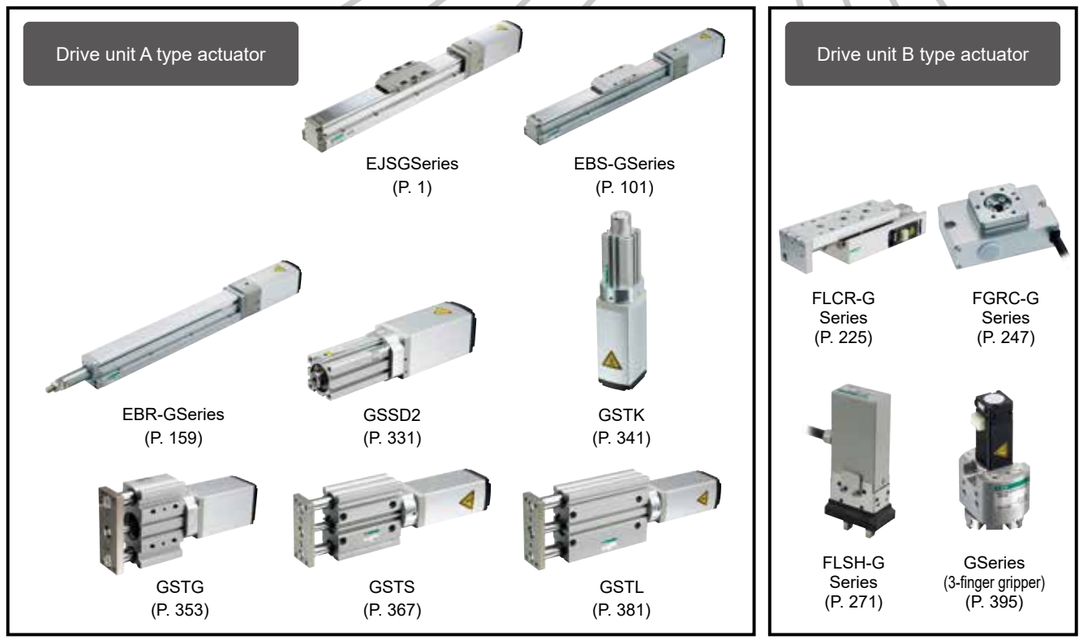
Compatible with Device Visual Programming Tool "ExiaStudio"

Compatible with "ExiaStudio", which allows for easy programming with intuitive operation without requiring specialized knowledge. Electric actuators can be easily controlled with direct values on a PC.



System Configuration





* EBS/EBR-P4 (for rechargeable battery production processes) can only be connected to the ECG controller.
* EBS/EBR-FPI (for food production processes) can only be connected to the ECR controller.
* FLCR-P4 (for rechargeable battery production processes) can only be connected to the ECG controller.

Description of each unit

● Communication unit (ECMG-CNN□30-□□D□□)

This is a unit that connects to a field network. It is possible to supply motive power and control power to other units. Install on the left end. For details, please refer to P. 542.

● Drive unit (ECMG-DNN□30-□□DNN)

This is a unit that drives an electric actuator. There are units that connect one axis to one drive unit and units that connect two axes. In addition, there are two types of drive units, A-type and B-type, and the actuators that can be connected are different. It is also possible to supply motive power directly to the drive unit. Up to 8 drive units can be connected per communication unit. For details, please refer to P. 548.

● End unit (ECMG-PNNN30-EACNN)

This is the terminating unit of the multi-axis controller. Install on the right end. Attached to the communication unit. For details, please refer to P. 542.

* A set model No. is not prepared. Orders are placed per unit.

Communication unit

ECMG-C Series

Unit that connects to a field network

For compatible detailed model Nos., please see our website.

Model No. Notation Method

ECMG - C ❶ NN A ❷ 30 - CL ❸ D NN ❹

❶Unit type

C	Communication unit

❷End unit

A	Attached (standard end unit)
N	Not included

❸Interface Specifications

CL	CC-Link
EC	EtherCAT
EN	EtherNet/IP

❹Attached items *1

NN	None
1N	CC-Link communication connector 1 port
2N	CC-Link communication connector 2 ports

*1 If EC or EN is selected for the interface specification, select "NN"; if CL is selected, select "1N" or "2N".

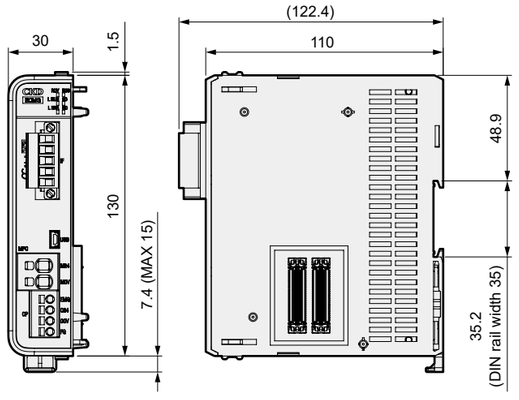
General Specifications

Item		Content						
Applicable Actuators		EJSG, EBS-G, EBR-G, GSSD2, GSTK, GSTG, GSTS, GSTL			FLCR-G, FGRC-G, FLSH-G, GCKW			
Applicable Motor Size		□35	□42	□56	□20	□25	□25L	□35
Configuration Tool		PC configuration software (S-Tools), connection cable: USB cable (mini-B)						
External Interface	Field network specifications	CC-Link, EtherCAT, EtherNet/IP						
Power supply voltage	Control power supply, motive power supply	24 VDC ±10%						
Current Consumption	Control power supply (per unit)	0.4 A or less						
	Motive power supply (per axis) *1	3.4 A or less *2	4.2 A or less *3	4.5 A or less *4	0.5 A or less	0.9 A or less	1.6 A or less	1.1 A or less
Brake current consumption		0.4 A or less						
Insulation Resistance		10 MΩ or more at 500 VDC						
Dielectric Strength		500 VAC for 1 minute						
Operating Ambient Temperature		0 to 40°C no freezing						
Operating Ambient Humidity		35 to 80% RH no condensation						
Storage Ambient Temperature		-10 to 50°C no freezing						
Storage ambient humidity		35 to 80% RH no condensation						
Operating atmosphere		No corrosive gas, explosive gas, or dust						
Weight		Approx. 180 g						

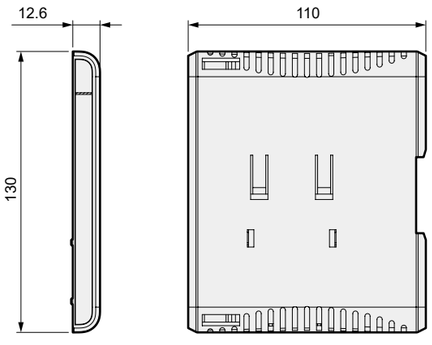
*1 For the motive power supply, in the case of a batch wiring system, the total must be 30 A or less.
*2 4.0A or less for EJSG and 1.8A or less for G Series (rod/stopper/guided).
*3 For G Series (rod, stopper, guided type), it will be 2.0 A or less.
*4 For G Series (rod, stopper, guided type), it will be 3.1 A or less.

External Dimension Drawing

● Communication unit



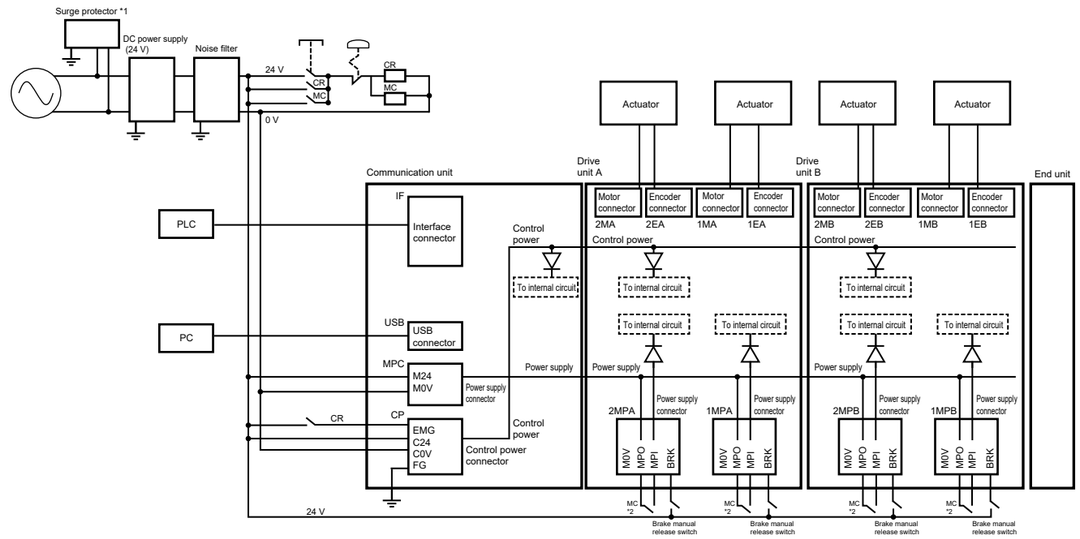
● End unit



* External dimensions are the same regardless of interface specifications. This figure shows the CC-Link specification.

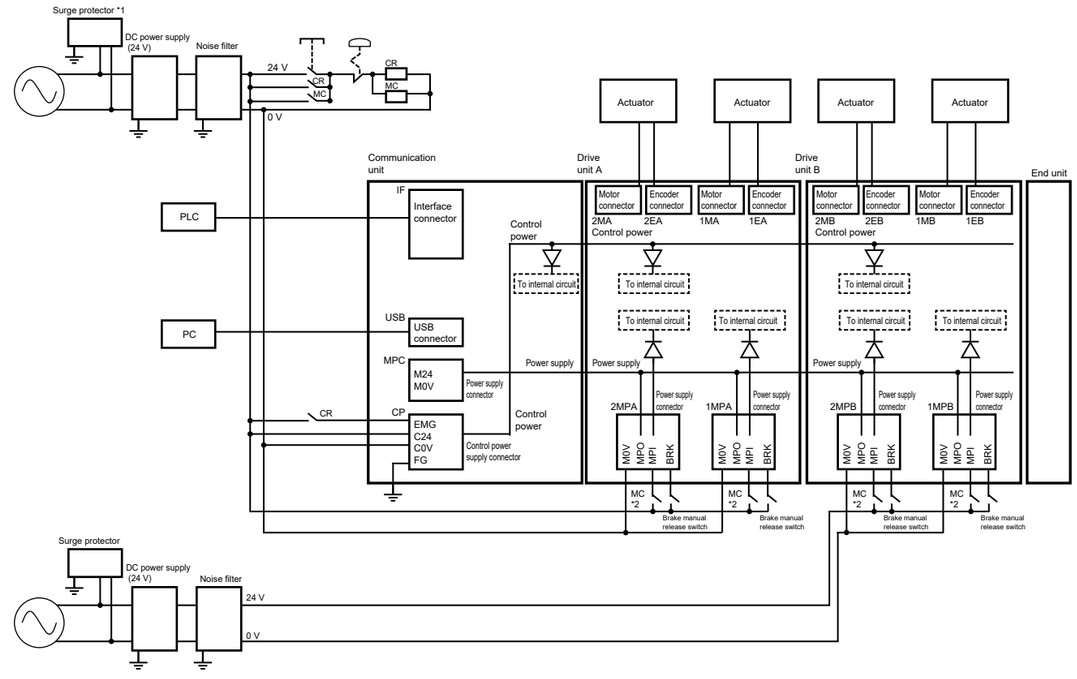
Connection Diagram

[Batch wiring method]



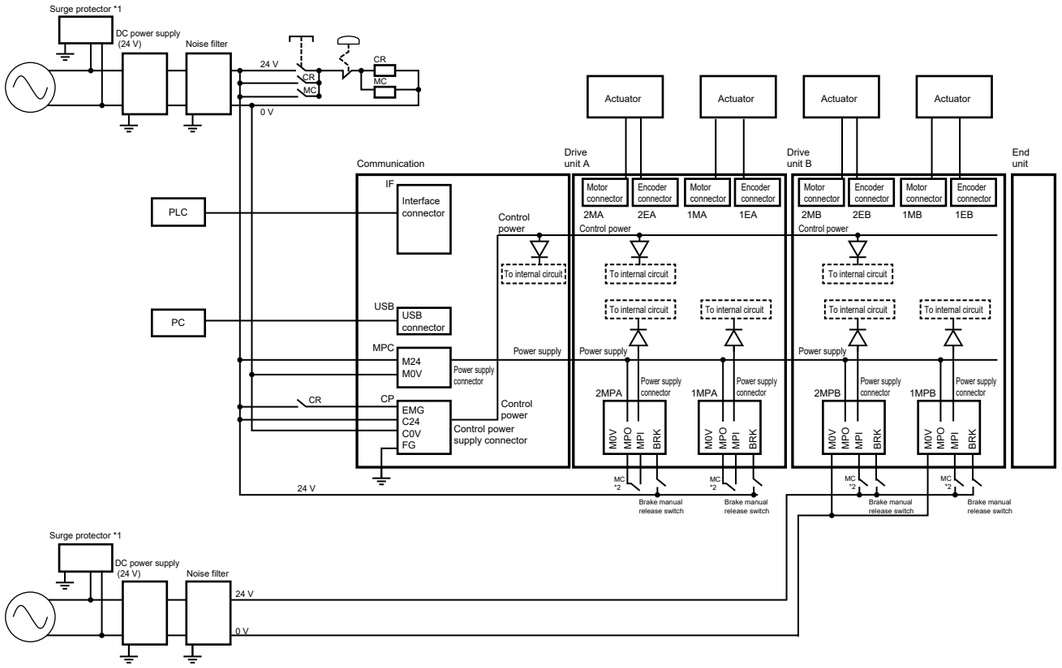
*1 A surge protector is required for CE marking compliance. In addition, the controller must be installed inside a control panel. For details on installation and wiring methods, please refer to the instruction manual.
*2 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals. (At the time of shipment, a jumper wire connects MPI and MPO.)

[Individual wiring method]



*1 A surge protector is required for CE marking compliance. In addition, the controller must be installed inside a control panel. For details on installation and wiring methods, please refer to the instruction manual.
*2 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the power supply and the MPI terminal. (At the time of shipment, a jumper wire connects MPI and MPO.)

[Mixed wiring method]



*1 A surge protector is required for CE marking compliance. In addition, the controller must be installed inside a control panel. For details on installation and wiring methods, please refer to the instruction manual.

*2 If it is necessary to shut off the motor drive source for safety category compliance, etc., connect the contacts of an electromagnetic switch, etc., between the MPI and MPO terminals for batch wiring, or between the power supply and the MPI terminal for individual wiring. (At the time of shipment, a jumper wire connects MPI and MPO.)

Maximum connectable axes by operation mode

Field network	Operation Mode			
	PIO	Simple Direct Value	Standard Direct Value	Full Direct Value
CC-Link	16 axes	16 axes	16 axes	10 axes
EtherCAT	16 axes	16 axes	16 axes	10 axes
EtherNet/IP	16 axes	16 axes	16 axes	10 axes

Description of field network operation modes

Operation Mode	Overview
PIO	Point operation can be used, and the I/O signal assignment can be changed in operation mode (PIO). However, direct value operation, which sets the operating conditions during operation directly from the PLC, cannot be selected. Point data and parameters can be read and written, but the monitor function cannot be used. For detailed items, please refer to the table below.
Simple Direct Value	By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the target position is arbitrarily set from the PLC and operated. Point data and parameters can be read and written, and the monitor function can also be used with restrictions. For detailed items, please refer to the table below.
Standard Direct Value	By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the operating conditions are arbitrarily set from the PLC with restrictions and operated. Point data and parameters can be read and written, and the monitor function can also be used. For detailed items, please refer to the table below.
Full Direct Value	By switching the direct value travel selection, you can select and use either the 64-point operation or the direct value operation, in which the operating conditions are arbitrarily set from the PLC and operated. Point data and parameters can be read and written, and the monitor function can also be used. For detailed items, please refer to the table below.

Operation Mode		PIO	Simple Direct Value	Standard Direct Value	Full Direct Value
Read/write point data		Yes	Yes	Yes	Yes
Read/Write parameters		Yes	Yes	Yes	Yes
Direct Value Travel Selection *1		Not selectable	Yes	Yes	Yes
Number of positioning points		64	Unlimited	Unlimited	Unlimited
Direct Value Travel Item *2	Target Position	–	○	○	○
	Positioning Width	–	–	○	○
	Speed	–	–	○	○
	Acceleration	–	–	○	○
	Deceleration	–	–	○	○
	Pushing Rate	–	–	○	○
	Pushing Distance	–	–	△	○
	Pushing Speed	–	–	○	○
	Gain magnification	–	–	*4	○
	Positioning Method	–	–	○	○
	Operation Method	–	–	○	○
	Stopping Method	–	–	○	○
	Acceleration/ Deceleration Method	–	–	○	○
Monitor Item *3	Position	–	○	○	○
	Speed	–	▲	○	○
	Current	–	▲	○	○
	Alarm Code	–	▲	○	○

*1: If direct value travel is not selected, it will operate with the value set in the point data. Therefore, the number of positioning points is up to 64.

*2: ○ indicates items that operate with values set from the PLC. - operates with the value set in the point data. △ operates with the value set in the common parameters.

*3: ○ indicates items that can be monitored. - indicates items that cannot be monitored. ▲ indicates items that can be monitored by selecting from ▲ (only one item can be monitored).

*4: Gain magnification is invalid.

CC-Link Specifications

[Communication Specifications]

Item	Specifications
CC-Link Version	Ver. 1.10, Ver. 2.00
Station type	Remote device station
Remote station number	1 to 64 (set by parameter setting)
Remote I/O (RX, RY)	128 points each (fixed regardless of operation mode)
Remote register (RWr, RWw)	Sum of the number of words corresponding to the operation mode for each axis (max. 128 words each) PIO mode: 2 words each Simple direct value mode: 4 words each Standard direct value mode: 8 words each Full Direct Value Mode: 12 words each
Number of occupied stations *1	1 to 4 (set by parameter setting) ver. 1.10 4 stations occupied Remote I/O : Up to 128 points *2 Remote register: Up to 16 words each ver. 2.00 1 stations occupied Remote I/O : Up to 128 pts. each Remote register: Up to 32 words each 2 stations occupied Remote I/O : Up to 384 points each Remote register: Up to 64 words each 3-station occupancy Remote I/O : Up to 640 points each Remote register: Up to 96 words each 4 stations occupied Remote I/O : Up to 896 points each Remote register: Up to 128 words each
Communication speed	10 M / 5 M / 2.5 M / 625 k / 156 kbps (set by parameter setting)
Extended cyclic setting	ver. 1.10 - ver. 2.00 1x/2x/4x/8x
Connection cable	CC-Link Ver. 1.10 compatible cable (Shielded 3-core twisted pair cable)
Monitor function	Position, speed, current, alarm

*1 The maximum number of remote output points and the maximum number of remote register words when selecting the number of occupied stations are listed.
*2 When using ver.1.10, select 4 stations to be occupied.

Cyclic data from master

Device No.		Full Direct Value Mode
		Signal name
RYn	0 to A	–
	B	Communication unit alarm reset
	C to F	–
RY (n+1)	0 to F	–
RY (n+2)	0 to F	Write data
RY (n+3)	0 to F	
RY (n+4)	0 to F	Data number
RY (n+5)	0 to F	
RY (n+6)	0 to 3	–
	4	Data request
	5	Data R/W selection
	6 to 7	–
	8 to F	Data R/W target designation
RY (n+7)	0 to F	–

Device No.		Full Direct Value Mode
		Signal name
RWw0	0 to 5	Point number selection bits 0 to 5
	6	Point move start
	7	JOG/INCH (-) move start
	8	JOG/INCH (+) move start
	9	Homing Start
	A	Servo ON
	B	Alarm Reset
	C	Stop #
	D	Direct Value Travel Selection
	E	INCH Selection
	F	–
RWw1	0 to F	Mode (direct value travel)
RWw2	0 to F	Position (direct value travel)
RWw3	0 to F	
RWw4	0 to F	Positioning width (direct value travel)
RWw5	0 to F	Speed (direct value travel)
RWw6	0 to 7	Acceleration (direct value travel)
	8 to F	Deceleration (direct value travel)
RWw7	0 to 7	Pushing rate (direct value travel)
	8 to F	Pushing speed (direct value travel)
RWw8	0 to F	Pushing distance (direct value travel)
RWw9	0 to F	
RWwA	0 to F	Gain magnification (direct value travel)
RWwB	0 to F	–

Cyclic data from controller

Device No.		Full Direct Value Mode
		Signal name
RXn	0	Temperature abnormality (warning)
	1	Inter-unit communication status 1
	2	Inter-unit communication status 2
	3 to 7	–
	8	Communication unit status
	9 to A	–
	B	Communication unit alarm status
	C to F	–
RX (n+1)	0 to F	Axis link status
RX (n+2)	0 to F	Read data
RX (n+3)	0 to F	
RX (n+4)	0 to F	Data (alarm)
RX (n+5)	0 to F	
RX (n+6)	0 to 3	Data response
	4	Data complete
	5	Data write status
	6 to F	–
RX (n+7)	0 to F	–

Device No.		Full Direct Value Mode
		Signal name
RWr0	0 to 5	Point move confirmation bits 0 to 5
	6	Point move complete
	7	Select output 1
	8	Select output 2
	9	Homing complete
	A	Servo ON state
	B	Alarm #
	C	Ready to operate
	D	Direct value travel state
	E	–
	F	–
RWr1	0 to F	–
RWr2	0 to F	Position (monitor value)
RWr3	0 to F	
RWr4	0 to F	Speed (monitor value)
RWr5	0 to F	Current (monitor value)
RWr6	0 to F	–
RWr7	0 to F	Alarm code (monitor value)
RWr8	0 to F	–
RWr9	0 to F	–
RWrA	0 to F	–
RWrB	0 to F	–

* The signal configuration for a single axis is shown. Since the device No. is determined by the number of axes to be operated, please refer to the instruction manual for details.
* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

EtherCAT Specifications

[Communication Specifications]

Item	Specifications
Communication speed	100 Mbps (Fast Ethernet, full-duplex)
Process data	Variable PDO mapping
Max. PDO data length	RxPDO: 272 bytes TxPDO: 272 bytes
Station alias	0 to 65535 (set by parameter)
Connection cable	EtherCAT compatible cable (CAT5e or higher twisted pair cable (double shielded with aluminum tape and braid) is recommended)
Node address	Master automatically assigns
Monitor function	Position, speed, current, alarm

Cyclic data from master

INDEX	Sub Index	bit	Full Direct Value Mode
			Signal name
0x2001	0x01	0 to 10	–
		11	Communication unit alarm reset
		12 to 31	–
	0x02	0 to 31	Write data
	0x03	0 to 31	Data number
	0x04	0 to 3	–
		4	Data request
		5	Data R/W selection
		6 to 7	–
		8 to 15	Data R/W target designation
		16 to 31	–
0x2003	0x01	0 to 5	Point number selection bits 0 to 5
		6	Point move start
		7	JOG/INCH (-) move start
		8	JOG/INCH (+) move start
		9	Homing Start
		10	Servo ON
		11	Alarm Reset
		12	Stop #
		13	Direct Value Travel Selection
		14	INCH Selection
		15	–
		16 to 31	Mode (direct value travel)
	0x02	0 to 31	Position (direct value travel)
	0x03	0 to 15	Positioning width (direct value travel)
		16 to 31	Speed (direct value travel)
	0x04	0 to 7	Acceleration (direct value travel)
		8 to 15	Deceleration (direct value travel)
		16 to 23	Pushing rate (direct value travel)
		24 to 31	Pushing speed (direct value travel)
	0x05	0 to 31	Pushing distance (direct value travel)
	0x06	0 to 15	Gain magnification (direct value travel)
		16 to 31	–

Cyclic data from controller

INDEX	Sub Index	bit	Full Direct Value Mode
			Signal name
0x2005	0x01	0	Temperature abnormality (warning)
		1	Inter-unit communication status 1
		2	Inter-unit communication status 2
		3 to 7	–
		8	Communication unit status
		9	–
		10	–
		11	Communication unit alarm status
		12 to 15	–
		16 to 31	Axis link status
	0x02	0 to 31	Read data
	0x03	0 to 31	Data (alarm)
	0x04	0 to 3	Data response
		4	Data complete
		5	Data write status
		6 to 31	–
0x2007	0x01	0 to 5	Point move confirmation bits 0 to 5
		6	Point move complete
		7	Select output 1
		8	Select output 2
		9	Homing complete
		10	Servo ON state
		11	Alarm #
		12	Ready to operate
		13	Direct value travel state
		14 to 31	–
	0x02	0 to 31	Position (monitor value)
	0x03	0 to 15	Speed (monitor value)
		16 to 31	Current (monitor value)
	0x04	0 to 15	–
		16 to 31	Alarm code (monitor value)
	0x05	16 to 31	–
	0x06	16 to 31	–

* The signal configuration for a single axis is shown. Since the Index and Sub Index are determined by the number of axes to be operated, please refer to the instruction manual for details.
* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

EtherNet/IP Specifications

[Communication Specifications]

Item	Specifications
Communication protocol	EtherNet/IP
Communication speed	Automatic setting (100 Mbps/10 Mbps, full-duplex/ half-duplex)
Number of occupied bytes	Input: 272 bytes Output: 272 bytes
IP address	Setting by parameter (0.0.0.0 to 255.255.255.255) Via DHCP server (any address)
RPI (Packet interval)	4 ms to 10000 ms
Connection cable	EtherNet/IP compatible cable (CAT5e or higher twisted pair cable (double shielded with aluminum tape and braid) is recommended)
Monitor function	Position, speed, current, alarm

Cyclic data from master

Byte	bit	Full Direct Value Mode
		Signal name
0	0 to 7	–
1	0 to 2	–
	3	Communication unit alarm reset
	4 to 7	–
2 to 3	0 to 7	–
4 to 5	0 to 7	Write data
6 to 7	0 to 7	
8 to 9	0 to 7	Data number
10 to 11	0 to 7	
12	0 to 3	–
	4	Data request
	5	Data R/W selection
	6 to 7	–
13	0 to 7	Data R/W target designation
14 to 15	0 to 7	–
16	0 to 5	Point number selection bits 0 to 5
	6	Point move start
	7	JOG/INCH (-) move start
17	0	JOG/INCH (+) move start
	1	Homing Start
	2	Servo ON
	3	Alarm Reset
	4	Stop #
	5	Direct Value Travel Selection
	6	INCH Selection
	7	–
18 to 19	0 to 7	Mode (direct value travel)
20 to 21	0 to 7	Position (direct value travel)
22 to 23	0 to 7	
24 to 25	0 to 7	Positioning width (direct value travel)
26 to 27	0 to 7	Speed (direct value travel)
28	0 to 7	Acceleration (direct value travel)
29	0 to 7	Deceleration (direct value travel)
30	0 to 7	Pushing rate (direct value travel)
31	0 to 7	Pushing speed (direct value travel)
32 to 33	0 to 7	Pushing distance (direct value travel)
34 to 35	0 to 7	
36 to 37	0 to 7	Gain magnification (direct value travel)
38 to 39	0 to 7	–

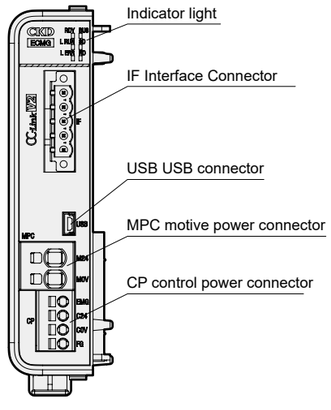
Cyclic data from controller

Byte	bit	Full Direct Value Mode
		Signal name
0	0	Temperature abnormality (warning)
	1	Inter-unit communication status 1
	2	Inter-unit communication status 2
	3 to 7	–
1	0	Communication unit status
	1 to 2	–
	3	Communication unit alarm status
	4 to 7	–
2 to 3	0 to 7	Axis link status
4 to 5	0 to 7	Read data
6 to 7	0 to 7	
8 to 9	0 to 7	Data (alarm)
10 to 11	0 to 7	
12	0 to 3	Data response
	4	Data complete
	5	Data write status
	6 to 7	–
13	0 to 7	–
14 to 15	0 to 7	–
16	0 to 5	Point move confirmation bits 0 to 5
	6	Point move complete
	7	Select output 1
17	0	Select output 2
	1	Homing complete
	2	Servo ON state
	3	Alarm #
	4	Ready to operate
	5	Direct value travel state
	6 to 7	–
18 to 19	0 to 7	–
20 to 21	0 to 7	Position (monitor value)
22 to 23	0 to 7	
24 to 25	0 to 7	Speed (monitor value)
26 to 27	0 to 7	Current (monitor value)
28 to 29	0 to 7	–
30 to 31	0 to 7	Alarm code (monitor value)
32 to 39	0 to 7	–

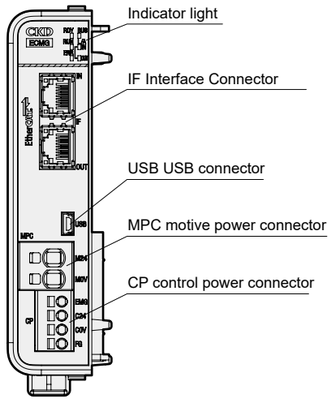
* The signal configuration for a single axis is shown. Since the number of bytes is determined by the number of axes to be operated, please refer to the instruction manual for details.
* For other operation modes, please refer to the instruction manual.
* # represents a negative logic signal.

[Panel Description]

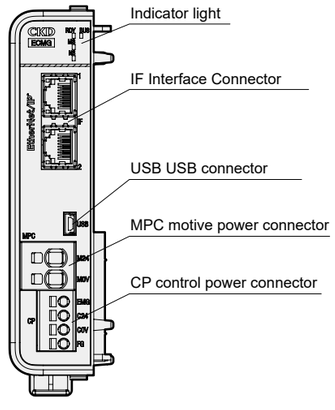
CC-Link



EtherCAT



EtherNet/IP



● Attached items

Product Name		
CC-Link communication connector 1 port	MSTB2.5/5-STF-5.08ABGYAU	PHOENIX CONTACT
CC-Link communication connector 2 ports	TFKC2.5/5-STF-5.08AU	PHOENIX CONTACT

Drive unit

ECMG-D Series

Unit that drives an electric actuator

For compatible detailed model Nos., please see our website.

Model No. Notation Method

● A-type

ECMG - D NNR30 - A2 DNN

❶ ❷

❶Unit type	
D	Drive unit

❷Drive unit specifications	*1
A1	A-type 1-axis
A2	A-type 2-axis

● B-type

ECMG - D NNN30 - B2 DNN

❶ ❷

❶Unit type	
D	Drive unit

❷Drive unit specifications	*1
B1	B-type 1-axis
B2	B-type 2-axis

*1 Compatible actuators differ depending on the drive unit specifications. For details, please refer to the table below.

Actuator \ Controller	ECMG		ECG-A	ECG-B	ECR
	A-type	B-type			
EBS-M					●
EBR-M					●
EBS-G	●		●		
EBR-G	●		●		
EJSG	●		●		
FLSH					●
FLCR					●
FGRC					●
FLSH-G		●		●	
FLCR-G		●		●	
FGRC-G		●		●	
GSSD2	●		●		
GSTK	●		●		
GSTG	●		●		
GSTS	●		●		
GSTL	●		●		
GCKW		●		●	

* EBS/EBR-P4 (for rechargeable battery production processes) can only be connected to the ECG controller.
* EBS/EBR-FPI (for food production processes) can only be connected to the ECR controller.
* FLCR-P4 (for rechargeable battery production processes) can only be connected to the ECG controller.

General Specifications

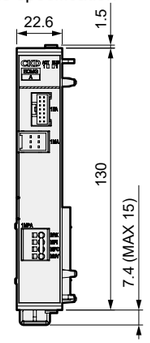
Item	Content						
Drive unit specifications	A-type 1-axis/2-axis			B-type 1-axis/2-axis			
Applicable Actuators	EJSG, EBS-G, EBR-G, GSSD2, GSTK, GSTG, GSTS, GSTL			FLCR-G, FGRC-G, FLSH-G, GCKW			
Applicable Motor Size	□35	□42	□56	□20	□25	□25L	□35
Configuration tool, external interface	By communication unit						
Power supply voltage / Motive power supply	24 VDC ±10%						
Current Consumption / Motive power supply (per axis) *1	3.4 A or less *2	4.2 A or less *3	4.5 A or less *4	0.5 A or less	0.9 A or less	1.6 A or less	1.1 A or less
Brake current consumption	0.4 A or less						
Insulation Resistance	10 MΩ or more at 500 VDC						
Dielectric Strength	500 VAC for 1 minute						
Operating Ambient Temperature	0 to 40°C no freezing						
Operating Ambient Humidity	35 to 80% RH no condensation						
Storage Ambient Temperature	-10 to 50°C no freezing						
Storage ambient humidity	35 to 80% RH no condensation						
Operating atmosphere	No corrosive gas, explosive gas, or dust						
Protection Structure	IP20						
Weight	Approx. 295 g						

* Does not support synchronous control or circular interpolation.
*1 For the motive power supply, in the case of a batch wiring system, the total must be 30 A or less.
*2 4.0A or less for EJSG and 1.8A or less for G Series (rod/stopper/guided).
*3 For G Series (rod, stopper, guided type), it will be 2.0 A or less.
*4 For G Series (rod, stopper, guided type), it will be 3.1 A or less.

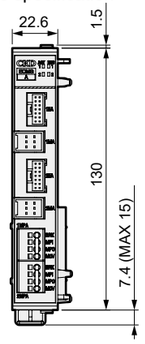
External Dimension Drawing

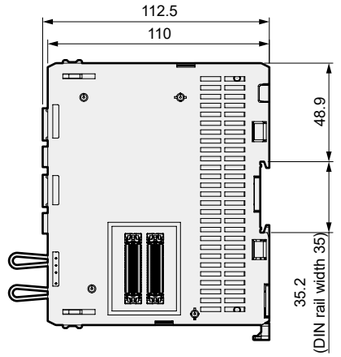
● Drive unit

1-axis specification



2-axis specification

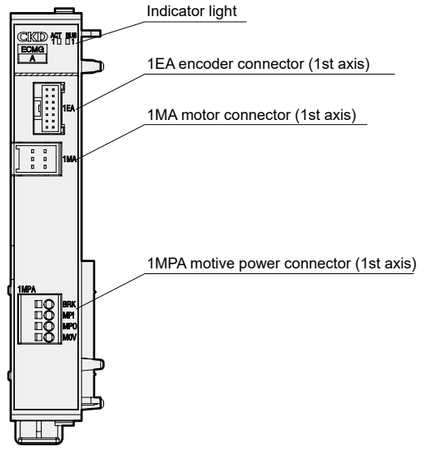




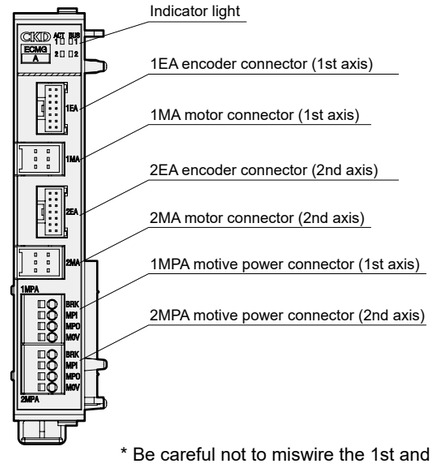
* The external dimensions of A-type and B-type are the same.

[Panel Description]

A-type 1-axis

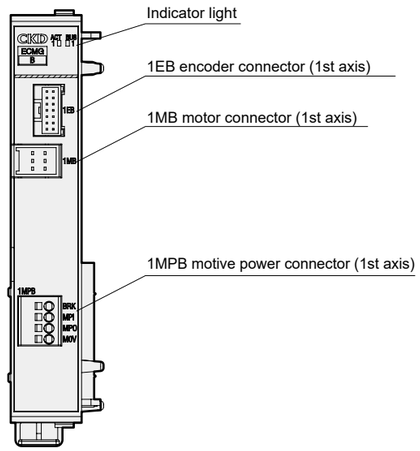


A-type 2-axis

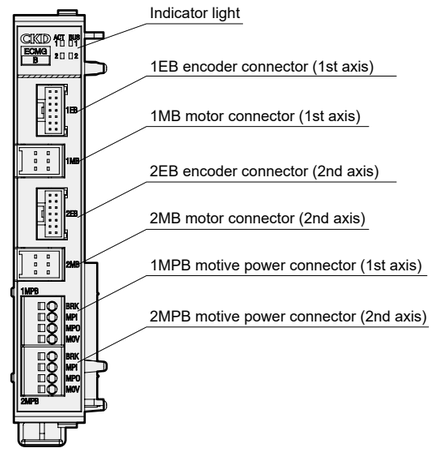


* Be careful not to miswire the 1st and 2nd axes.

B-type 1-axis



B-type 2-axis



* Be careful not to miswire the 1st and 2nd axes.

Relay cable for ECMG-DNN□30-A

● Motor cable (fixed/flexible)

* Also selectable by actuator model

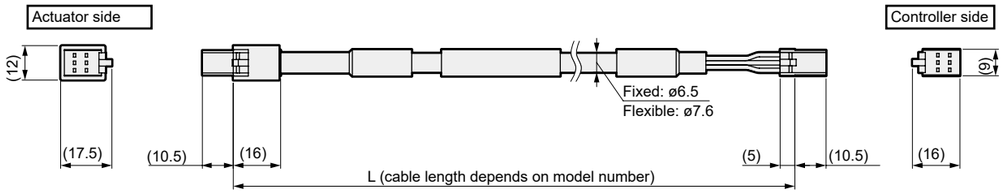
EA-CBLM 4 - S 01

❶Applicable Actuators	
4	EJSG, EJSG-C, EBS-G, EBR-G, GSSD2, GSTK, GSTG, GSTS, GSTL
5	EJSG-G

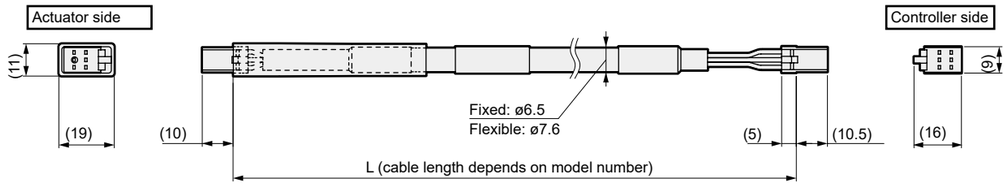
❷Cable Type	
S	Fixed cable
R	Flexible cable

❸Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

● EA-CBLM4



● EA-CBLM5



* Please use all cables with a bending radius of 51 mm or more.

● Encoder cable (fixed/flexible)

* Also selectable by actuator model

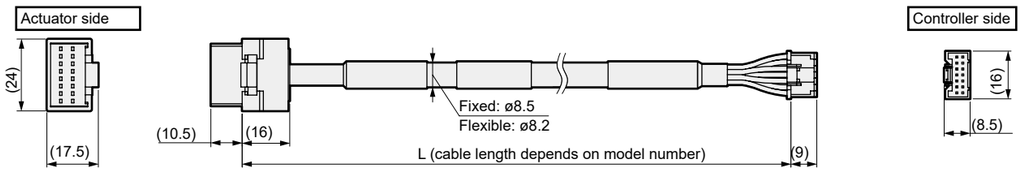
EA-CBLE 4 - S 01

❶Applicable Actuators	
4	EJSG, EJSG-C, EBS-G, EBR-G, GSSD2, GSTK, GSTG, GSTS, GSTL
5	EJSG-G

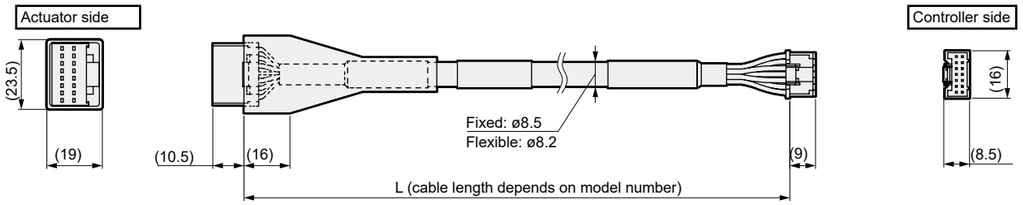
❷Cable Type	
S	Fixed cable
R	Flexible cable

❸Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

● EA-CBLE4



● EA-CBLE5



* Please use all cables with a bending radius of 51 mm or more.

Relay cable for ECMG-DNN□30-B

● Motor/encoder relay cable (fixed/flexible)

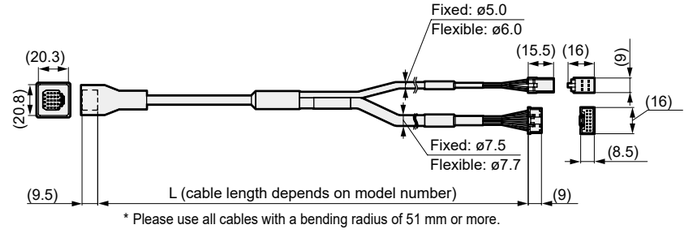
* Also selectable by actuator model

EA-CBLME 4 - S 01

❶Applicable Actuators	
4	FLCR-G, FGRC-G, FLSH-G, GCKW

❷Cable Type	
S	Fixed cable
R	Flexible cable

❸Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

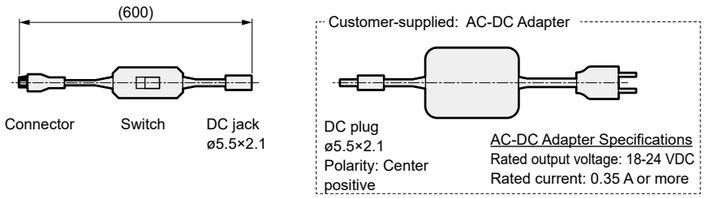


* Please use all cables with a bending radius of 51 mm or more.

Brake release unit

● FLCR brake release unit

EA-BRK-UNIT



Related Parts

● End unit

ECMG-PNNN30-EACNN

* For the external dimension drawing, please refer to P. 542.

Recommended parts

● Recommended Power Supply

Manufacturer	Model No. *1	Manufacturer model number	Input voltage	Rated current *2	Output peak current *2 *3	Parallel connection	DIN rail compatible
TDK-Lambda Corporation	–	HWS300P-24	85-264 VAC	12.5 A	42A *4	×	×
	–	HWS600P-24	85-264 VAC	25A	83A *4	○ *6	×
Cosel Co., Ltd.	EA-PWR-KHNA240F-24-N2	KHNA240F-24-N2	85-264 VAC	10 A	15 A	×	×
	EA-PWR-KHNA240F-24	KHNA240F-24	85-264 VAC	10 A	15 A	×	Yes
	–	AEA600F-24-N	85-264 VAC	17.5A *5	52.5A *5	Yes	×
	–	AEA1000F-24-N	85-264 VAC	30.0A *5	100.0A *5	Yes	×
OMRON Corporation	–	S8VK-WA96024 *7	85-264 VAC	10 A	15 A	○ *6	Yes
	–	S8VK-WA96024 *7	85-264 VAC	20 A	30 A	○ *6	Yes
	–	S8VK-WA96024 *7	170-240 VAC	40 A	60 A	○ *6	Yes

*1 Can be purchased from CKD. - (hyphenated) products cannot be purchased from CKD, so please contact each manufacturer.
*2 Derating of output power may be necessary depending on the power supply mounting method, ambient temperature, input voltage, etc. For details on the operating conditions of the power supply, please refer to the manufacturer's website.
*3 Be aware of usage restrictions due to peak current, such as DUTY restrictions. For details, please refer to the manufacturer's website.
*4 This is the current when 200 VAC is input.
*5 This is the current at 230 VAC with natural air cooling.
*6 Up to 2 units can be connected in parallel
*7 To use as a UL/cUL standard compliant product, please use this power supply.

● Other parts

Product Name	Manufacturer	Model Number
Noise filter for power supply (single-phase, 50 A)	OMRON Corporation	RSEN-2050

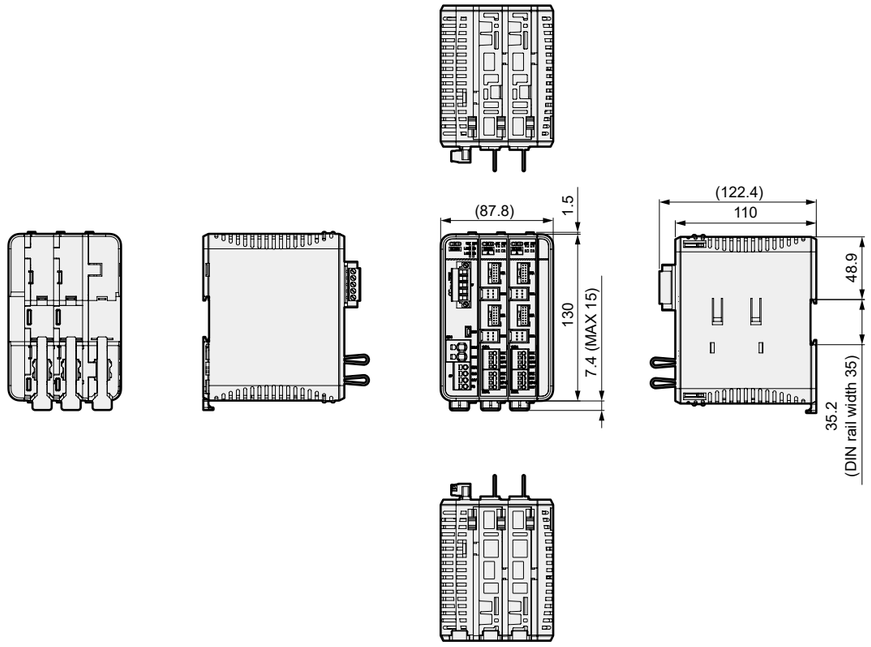
* Cannot be purchased from CKD, so please contact each manufacturer.
* For the ferrite core to be used, please refer to the instruction manual.

MEMO

Controller
ECMG
ECG
ECR
ESC4
Ending

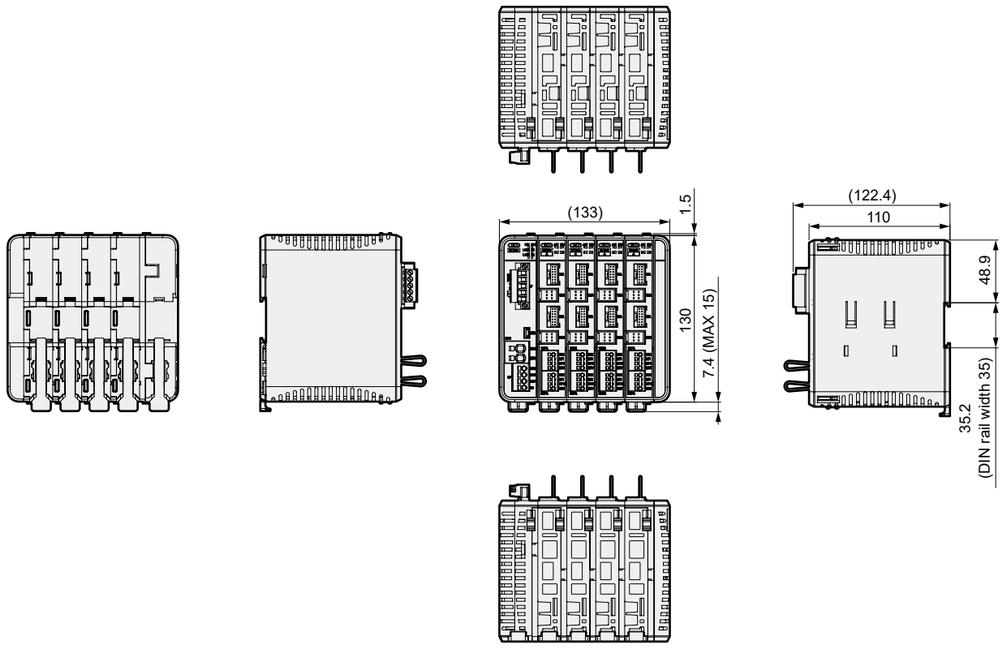
ECMG Combination External Dimension Example

[When connecting 2 drive units]



* External dimensions are the same regardless of interface specifications. This figure shows the CC-Link specification. (Equipped with 1 CC-Link communication connector port)

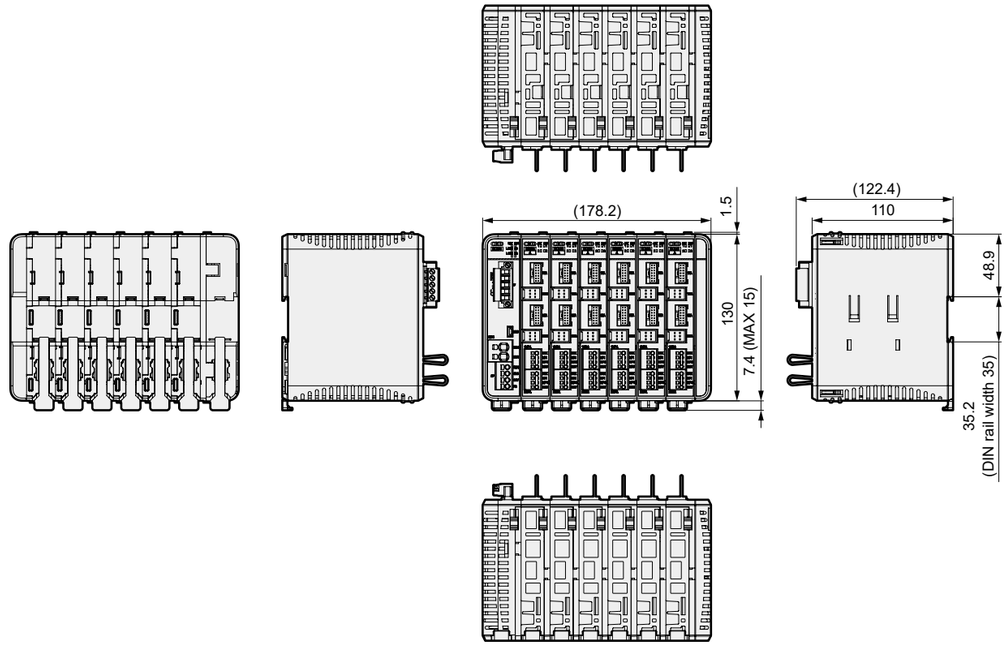
[When connecting 4 drive units]



* External dimensions are the same regardless of interface specifications. This figure shows the CC-Link specification. (Equipped with 1 CC-Link communication connector port)

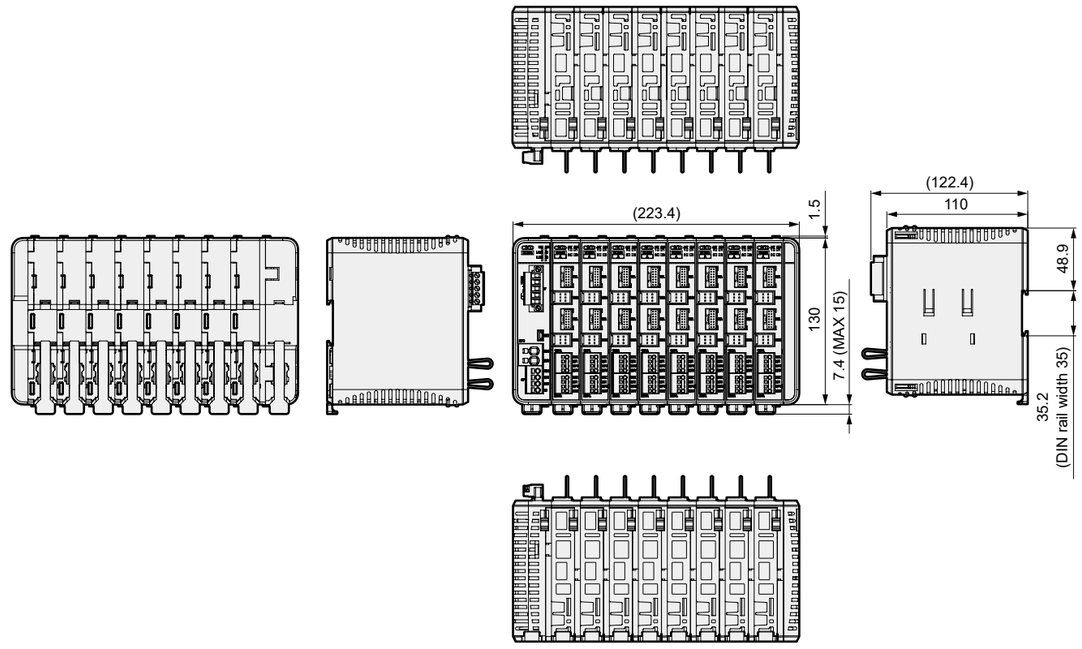
ECMG Combination External Dimension Example

[When connecting 6 drive units]



* External dimensions are the same regardless of interface specifications. This figure shows the CC-Link specification. (Equipped with 1 CC-Link communication connector port)

[When connecting 8 drive units]



* External dimensions are the same regardless of interface specifications. This figure shows the CC-Link specification. (Equipped with 1 CC-Link communication connector port)

STEP1 Selection of Interface

Select the communication unit interface from CC-Link, EtherCAT, and EtherNet/IP.

Interface type	Communication unit model number
CC-Link V2	ECMG-CNN□30-CLD□□
EtherCAT	ECMG-CNN□30-ECDNN
EtherNet/IP	ECMG-CNN□30-ENDNN

STEP2 Selection of Actuator and Drive Unit

Select a drive unit compatible with the selected actuator so that it fits within 8 units. (See P. 548)

Actuator model	Drive unit	
	Number of connected actuator axes	Model No.
EJSG, EBS-G, EBR-G GSSD2, GSTK, GSTG, GSTS, GSTL	2-axis specification	ECMG-DNNR30-A2DNN
	1-axis specification	ECMG-DNNR30-A1DNN
FLCR-G, FGRC-G, FLSH-G, GCKW	2-axis specification	ECMG-DNNN30-B2DNN
	1-axis specification	ECMG-DNNN30-B1DNN

STEP3 Confirmation of current consumption value (If using individual wiring for the drive unit, omit this STEP.)

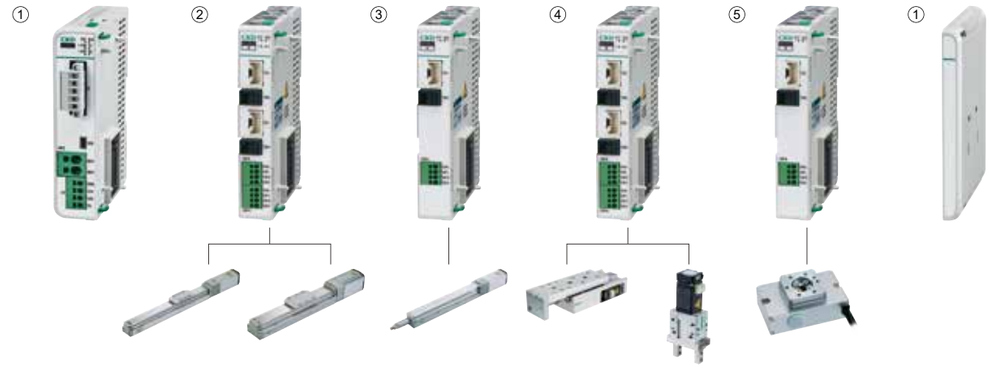
● For the motive power supply, when supplying power from the communication unit using the batch wiring method, the total motive power consumption of the following drive units must be 30 A or less. Also, when using a brake, please add the brake current (0.4 A).

· Drive unit motive power supply current consumption per axis

Model	Size	Motor Size	Current	Model	Size	Motor Size	Current	Model	Size	Motor Size	Current
EJSG EBS-G EBR-G	04	□35	3.4A *1	FLCR-G	16	□20	0.5 A	GSSD2, GSTK, GSTG, GSTS, GSTL	20	□35	1.8 A
	05	□42	4.2 A		20	□25	0.9 A		32	□42	2.0 A
	08	□56	4.5 A		25	□25L	1.6 A		50	□56	3.1 A
FLSH-G	16	□20	0.3 A	FGRC-G	10	□20	0.3 A	GCKW	16	□20	0.3 A
	20	□25	0.5 A		30	□25	0.7 A		20	□25	0.5 A
	25	□25L	0.6 A		50	□35	1.1 A		25	□35	0.6 A

*1 In the case of EJSG, it is 4.0 A.

Selection Example



	EBS-04G	EBS-08G	EBR-05G	FLCR-20G	FLSH-16G	FGRC-30G
Motive power supply capacity	3.4 A	4.5 A	4.2 A	0.3 A	0.9 A	0.7 A

Total power supply current 3.4A+4.5A+4.2A+0.3A+0.9A+0.7A = 14.0A

Total 14.0 A (total motive power supply current for batch wiring method) ≤ 30 A ... OK

STEP4 Confirmation of Power Supply Capacity

● For the control power supply, it is 0.4 A or less per unit (excluding the end unit), and the number of units×0.4 A is the maximum control current. Select a power supply so that the maximum control current does not exceed the rating of the applicable power supply.

· Max. control power current

Unit	Specifications	Model No.	Current
Communication unit	CC-Link	ECMG-CNN□30-CLD□□	0.4 A
	EtherCAT	ECMG-CNN□30-ECDNN	0.4 A
	EtherNet/IP	ECMG-CNN□30-ENDNN	0.4 A
Drive unit	A-type 2-axis	ECMG-DNNR30-A2DNN	0.4 A
	A-type 1-axis	ECMG-DNNR30-A1DNN	0.4 A
	B-type 2-axis	ECMG-DNNN30-B2DNN	0.4 A
	B-type 1-axis	ECMG-DNNN30-B1DNN	0.4 A

Control power supply current example
: For 4 axes of drive unit A-type
Communication unit+Drive unit A-type 2-axis×2 units
0.4A×3 unit = 1.2A or less

For 11 axes of drive unit A-type
A type 2-axis×5 units of communication unit+drive unit
+Drive unit A type 1-axis
0.4 A×7 units = 2.8 A or less

● For the power supply to be applied to the motive power supply, select a power supply so that the maximum motive power current of the following drive unit does not exceed the rating of the applicable power supply. Alternatively, select a power supply that supports output peak current. For recommended power supplies, please refer to P. 552. Also, when using a brake, please add the brake current (0.4 A).

· Maximum motive power current per axis of the drive unit

Model	Size	Motor Size	Current	Model	Size	Motor Size	Current	Model	Size	Motor Size	Current
EJSG EBS-G EBR-G	04	□35	12.4 A	FLCR-G	16	□20	1.0 A	GSSD2, GSTK, GSTG, GSTS, GSTL	20	□35	5.7 A
	05	□42	12.2 A		20	□25	1.5 A		32	□42	7.5 A
	08	□56	12.5 A		25	□25L	2.8 A		50	□56	4.7 A
FLSH-G	16	□20	0.4 A	FGRC-G	10	□20	0.5 A	GCKW	16	□20	0.4 A
	20	□25	0.7 A		30	□25	0.9 A		20	□25	0.7 A
	25	□25L	0.8 A		50	□35	1.5 A		25	□35	0.8 A

* The above maximum motive power current of the drive unit is the instantaneous maximum current under specific conditions within the specifications, and varies depending on the actuator, lead, motor mounting direction, motor installation direction, acceleration/deceleration, speed, etc. Please contact us for details.
* Depending on the operating environment and conditions, the actuator may require a stop time. Please contact us if the stop time is 1.0 s or less.

Special Order Product*

● Change of relay cable length

The length of the relay cable can be changed. The cable length can be changed within the range of 1 m to 10 m.

* For details on special order products, please contact our sales office.

MEMO

Controller
ECMG
ECG
ECR
ESC4
Ending