



Controller

# EC07-EC63

- Compatible actuators: ERL2•ESD2

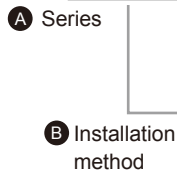


## Features

- Compact, light weight and thin (Body width 35mm)
- Can be set without manual
- Perfect installation compatibility with actuator
- PC software available

## How to order

EC **07** - **B**



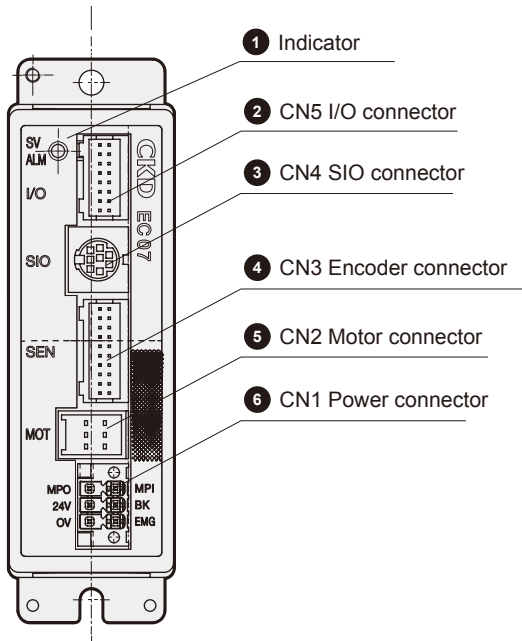
Symbol	Descriptions
<b>A Series</b>	
<b>07</b>	7 point
<b>63</b>	63 point
<b>B Installation method</b>	
<b>A</b>	EC07 Standard installation
<b>B</b>	EC07 DIN rail installation
<b>C</b>	EC63 Standard installation
<b>D</b>	EC63 DIN rail installation

## Specifications

Descriptions	Series	
	EC07	EC63
Applicable motor size	□42, □56	
Setting method	With teaching pendant or PC software	
Control mode	Solenoid valve mode (Single 2 position, double 2 position, double 3-position) Simple mode (3 point) Standard mode (7 point)	Solenoid valve mode (Single 2 position, double 2 position, double 3-position) Simple mode (7 point) Standard mode (63 point)
Body light	Green: Motor energizing (de-energizing while flashing) / Red: alarm	
Input no.	7 points (photo coupler insulation)	10 points (photo coupler insulation)
No. of output points	7 points (photo coupler insulation)	12 points (photo coupler insulation)
Motor power voltage	24 VDC ± 10%	
Motor part max. instantaneous current	□42: 2.7A, □56: 4A	
Control power source voltage	24 VDC ± 10%	
Control section current consumption	300mA or less (includes ETP2 current consumption)	
Brake	Power voltage	24 VDC ± 10%
	Power consumption	Refer to the specifications for each actuator
Insulation resistance	100 MΩ and over at 500 VDC	
Withstanding voltage	1000 VAC for one minute	
Ambient temperature	0 to 40°C no freezing	
Ambient humidity	35 to 80% (with no dew condensation)	
Storage ambient temperature	-10 to 50°C no freezing	
Storage ambient humidity	35 to 80% (with no dew condensation)	
Atmosphere	Free of corrosive and explosive gases and dust	
Degree of protection	IEC standards IP30 equivalent	
Weight	Approx. 150g (Standard installation)	Approx. 180g (Standard installation)
	Approx. 180g (DIN rail installation)	Approx. 210g (DIN rail installation)

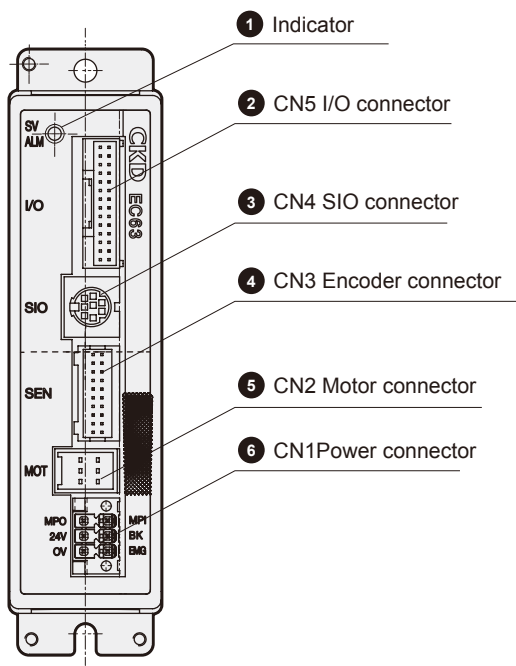
## Panel description

### • EC07



- 1 Indicator  
Green: Motor energizing (de-energizing while flashing)  
Red: alarm
- 2 I/O connector  
Input/output the control signal by connecting external control devices (PLC, etc.).
- 3 SIO connector  
Connect the PC and the teaching pendant, set the parameters, and carry out manual operations.
- 4 Encoder connector  
Connect relay cable and input the encoder signal.
- 5 Motor connector  
Connect relay cable and output power signal to motor.
- 6 Power connector  
Input 24VDC control power and motor power to the controller.

### • EC63

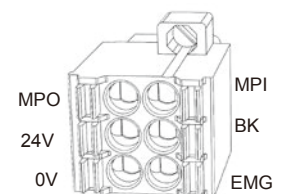


Power connector: CN1 \*Power plug is enclosed.

### CN1 List of power connector terminals (manufactured by PHOENIX CONTACT DFMC 1.5/3-STF-3.5)

Terminal name	Function name	Functional explanation
BK	Brake Release	Apply 24 VDC to release brake.
MPI	Motor power shutoff	MPI and MPO is connected with jumper wire in standard.
MPO	Motor power shutoff	By shutting it off, motor power is shut off.
24V	Common power (+)	Input 24 VDC common for motor power and control power.
0V	Common power (-)	Connect 0 VDC common for motor power, control power, releasing brake, emergency stop input.
EMG	Emergency Stop Input	Connect the b-contact emergency stop switch, then input 24 VDC.

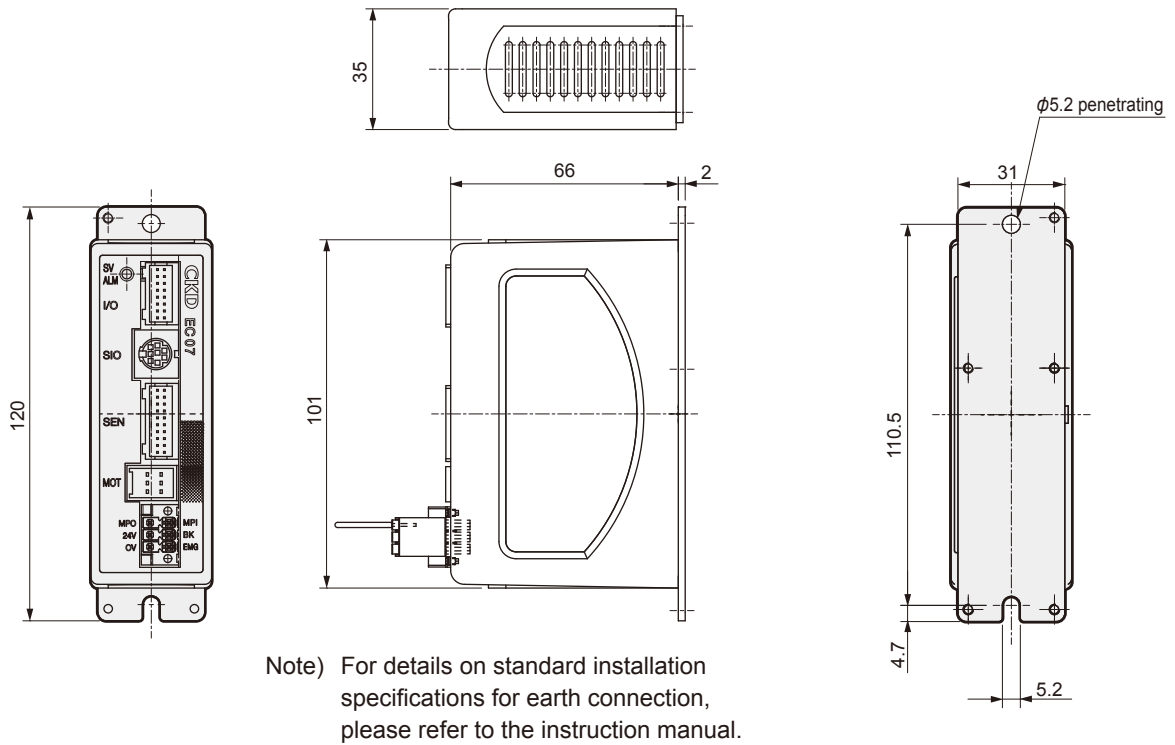
CN1 power plug



## Dimensions

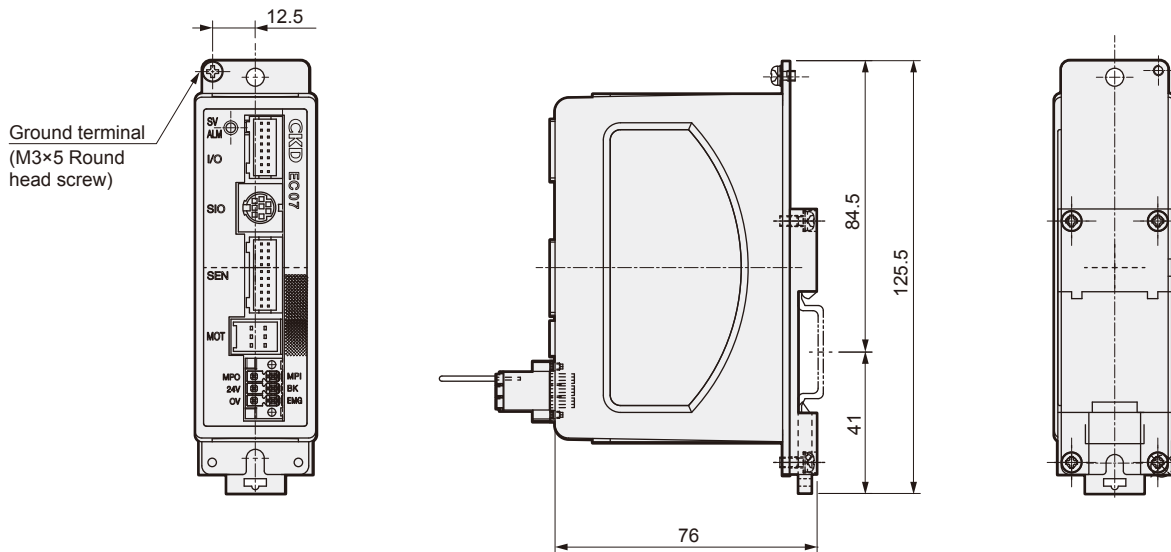
- EC07

### [A: Standard installation]



### [B: DIN rail installation]

\*It is possible to mount on DIN rail



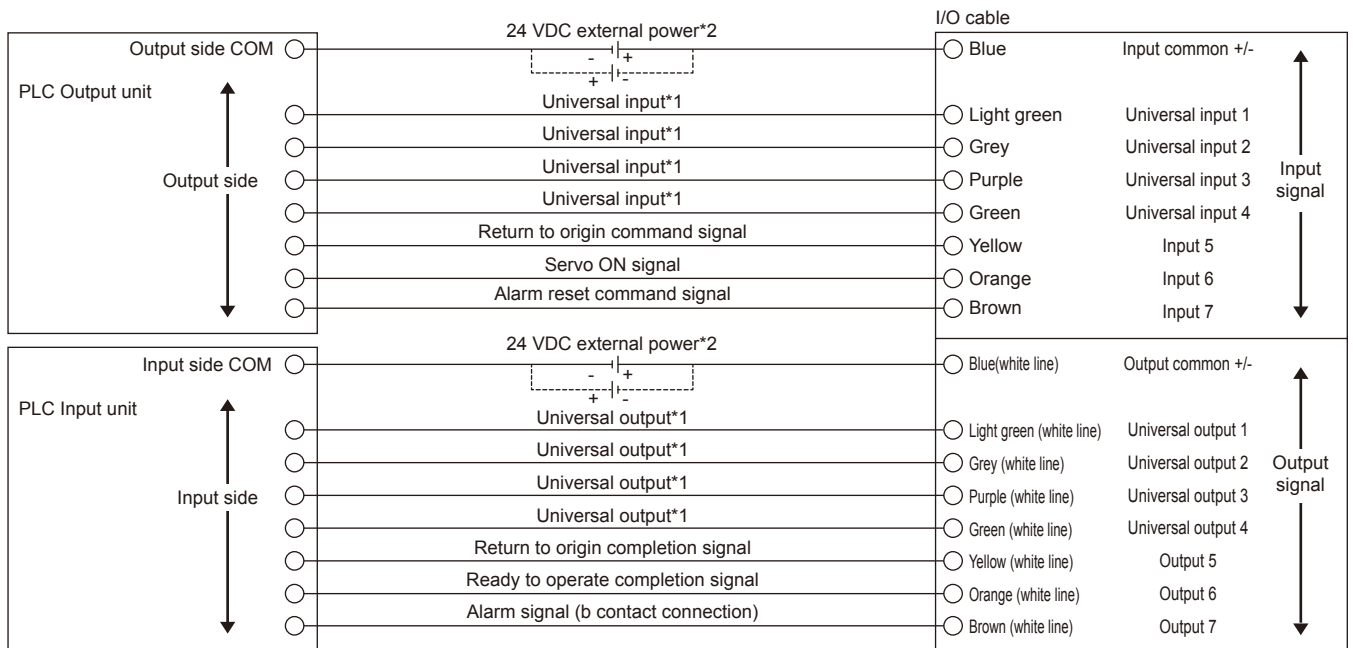
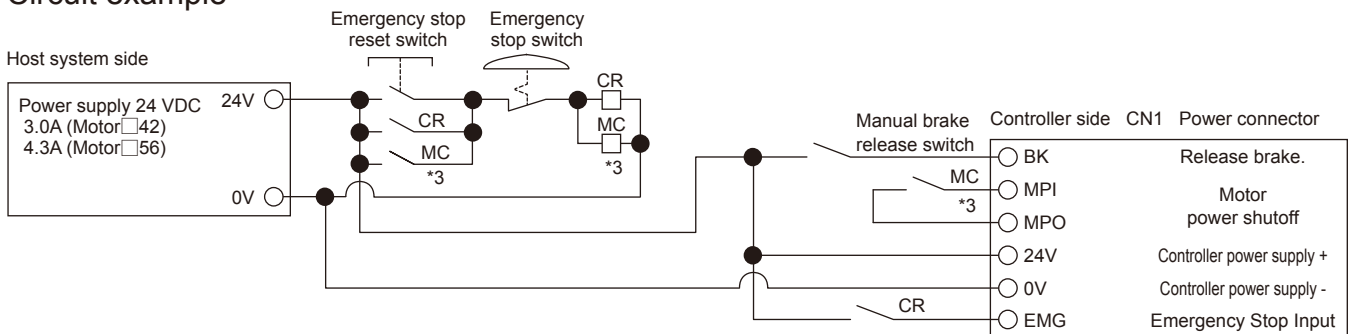
• EC07

## Wiring

### I/O cable specification

Descriptions	Specifications
Type	20-core cabtyre cord (UL94V-0)
Sheath material	Polyvinyl chloride
Sheath diameter	φ8.4
Sheath color	Gray
Conductor	0.2mm <sup>2</sup> (AWG24) annealed copper wire
Length of stripped lead wire (reference)	Approximate 7 mm from lead wire end

### Circuit example



### Note:

Check once more before turning the product on to prevent incorrect wiring.

\*1: Refer to table below for details on the Universal I/O.

\*2: External power supply (24 VDC) is required for both input/output. Input/output COM is available for both + and -.

\*3: To shut off the motor drive power supply externally due to the safety category issue, connect the contact like electromagnetic switch between MPI and MPO terminals.

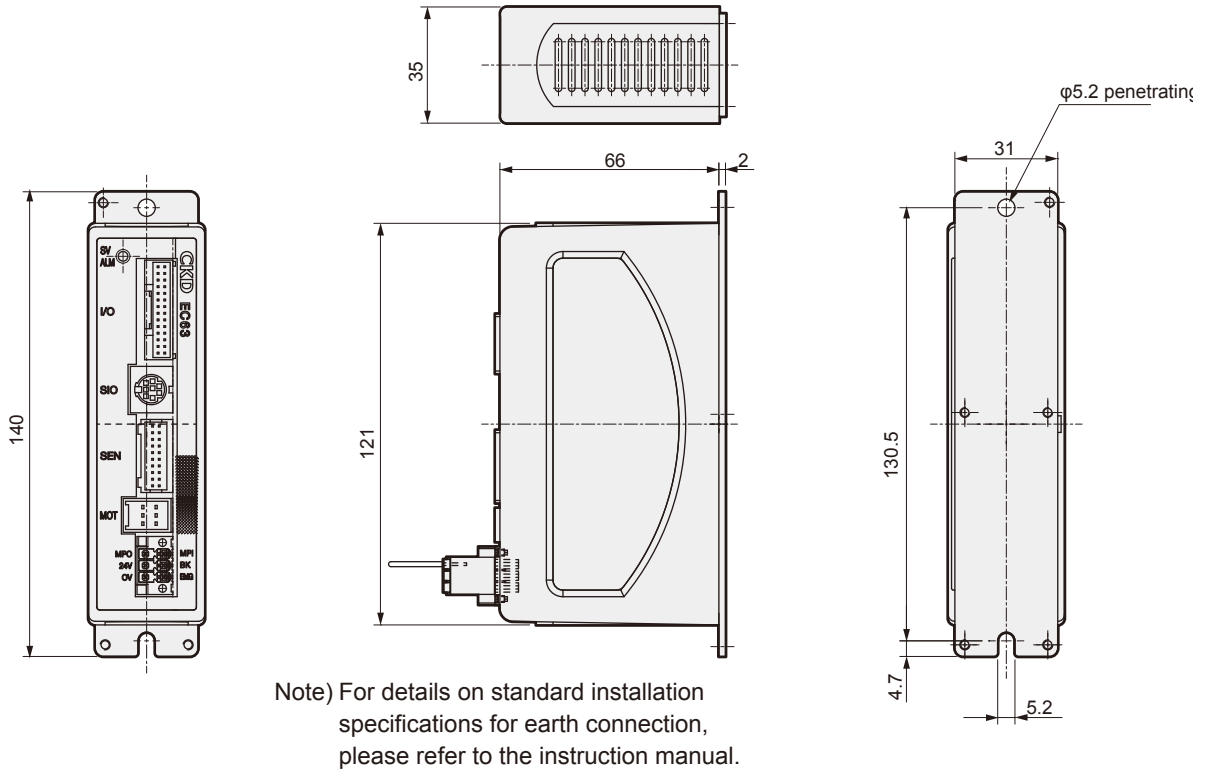
### Lay out of general purpose I/O

Control mode	Standard mode 7 point	Simple mode 3 points	Solenoid valve mode		
			Double 2-position	Double 3-position	Single
Universal input 1	Point moving start	Point 1 moving start	Solenoid valve moving command 1	Solenoid valve moving command 1	
Universal input 2	Point selection bit 2	Point 2 moving start	Solenoid valve moving command 2	Solenoid valve moving command 2	Solenoid valve moving command
Universal input 3	Point selection bit 1	Point 3 moving start			
Universal input 4	Point selection bit 0				
Universal output 1	Point moving done	Point 1 moving done	Point 1 moving done	Point 1 moving done	Point 1 moving done
Universal output 2	Point confirmation bit 2	Point 2 moving done	Point 2 moving done	Point 2 moving done	Point 2 moving done
Universal output 3	Point confirmation bit 1	Point 3 moving done	Switch 1 output	Switch 1 output	Switch 1 output
Universal output 4	Point confirmation bit 0		Switch 2 output	Switch 2 output	Switch 2 output

## Dimensions

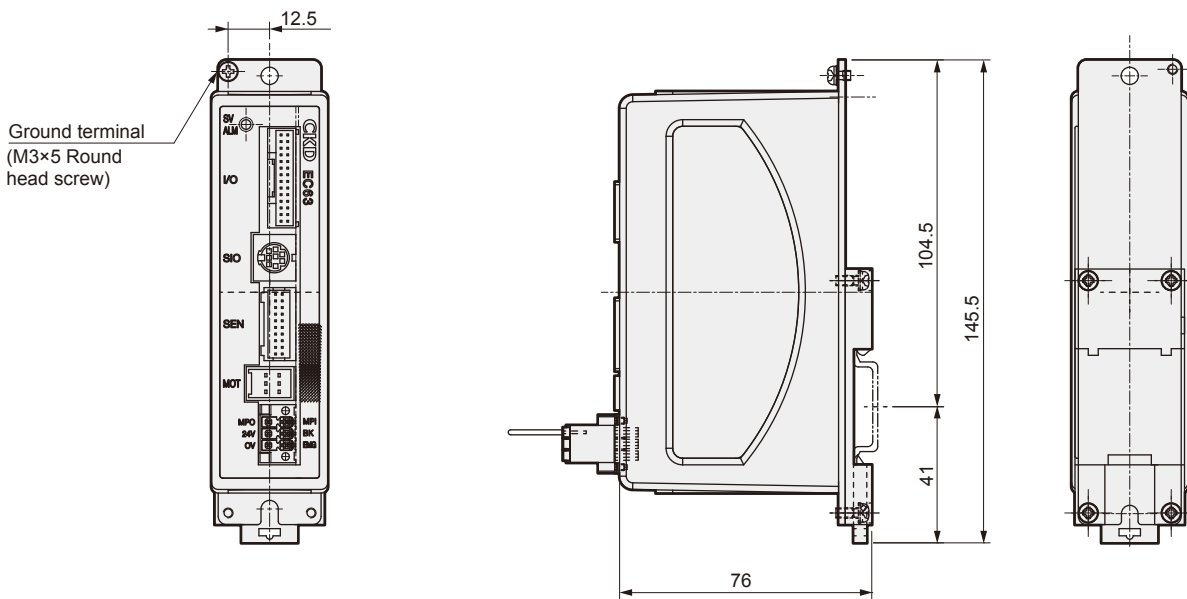
- EC63

[C: Standard installation]



[D: DIN rail installation]

\*It is possible to mount on DIN rail



• EC63

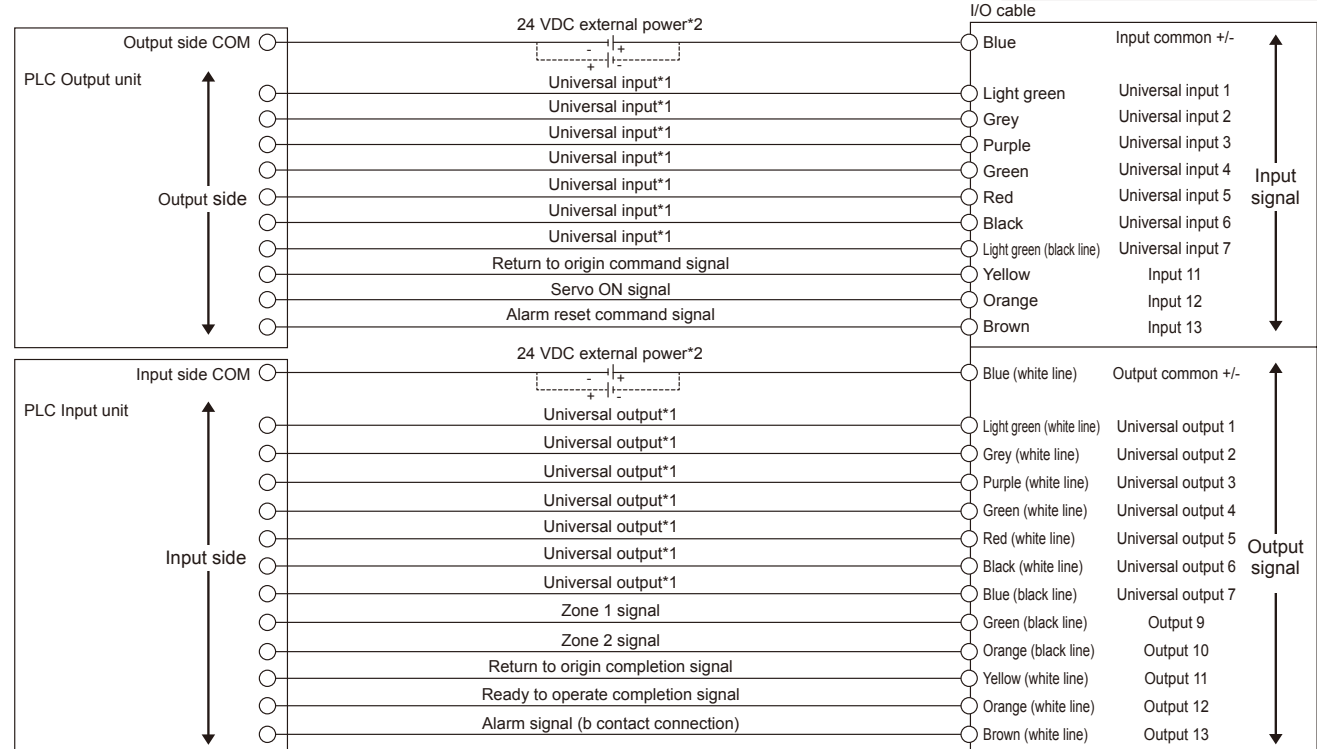
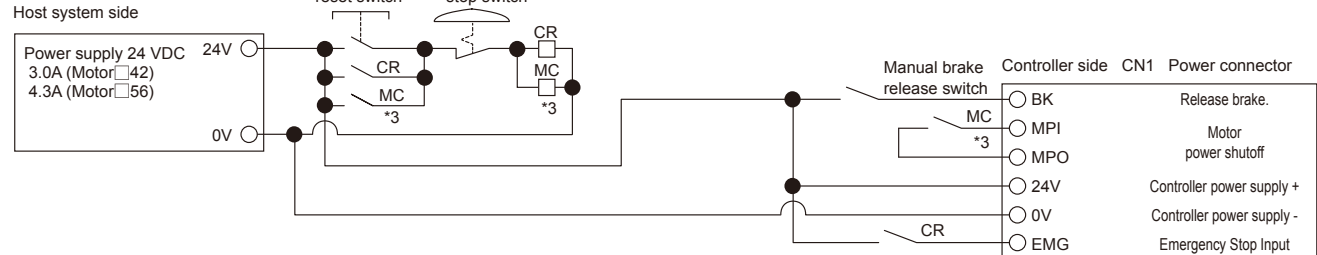
## Wiring

### I/O cable specification

Descriptions	Specifications
Type	28-core cabtyre cord (UL94V-0)
Sheath material	Polyvinyl chloride
Sheath diameter	φ 8.8

Descriptions	Specifications
Sheath color	Gray
Conductor	0.2mm <sup>2</sup> (AWG24) annealed copper wire
Length of stripped lead wire (reference)	Approximate 7 mm from lead wire end

### Circuit example



#### Note:

Check once more before turning the product on to prevent incorrect wiring.

\*1: Refer to table below for details on the Universal I/O. \*2: External power supply (24 VDC) is required for both input/output. Input/output COM is available for both + and -.

\*3: To shut off the motor drive power supply externally due to the safety category issue, connect the contact like electromagnetic switch between MPI and MPO terminals.

### Layout of general purpose I/O

Control mode	Standard mode 63 point	Simple mode 7 point	Solenoid valve mode		
			Double 2-position	Double 3-position	Single
Universal input1	Point moving start	Point 1 moving start	Solenoid valve moving command 1	Solenoid valve moving command 1	
Universal input2	Point selection bit 5	Point 2 moving start	Solenoid valve moving command 2	Solenoid valve moving command 2	Solenoid valve moving command
Universal input3	Point selection bit 4	Point 3 moving start			
Universal input4	Point selection bit 3	Point 4 moving start			
Universal input5	Point selection bit 2	Point 5 moving start			
Universal input6	Point selection bit 1	Point 6 moving start			
Universal input7	Point selection bit 0	Point 7 moving start			
Universal output1	Point moving done	Point 1 moving done	Point 1 moving done	Point 1 moving done	Point 1 moving done
Universal output2	Point confirmation bit 5	Point 2 moving done	Point 2 moving done	Point 2 moving done	Point 2 moving done
Universal output3	Point confirmation bit 4	Point 3 moving done	Switch 1 output	Switch 1 output	Switch 1 output
Universal output4	Point confirmation bit 3	Point 4 moving done	Switch 2 output	Switch 2 output	Switch 2 output
Universal output5	Point confirmation bit 2	Point 5 moving done			
Universal output6	Point confirmation bit 1	Point 6 moving done			
Universal output7	Point confirmation bit 0	Point 7 moving done			

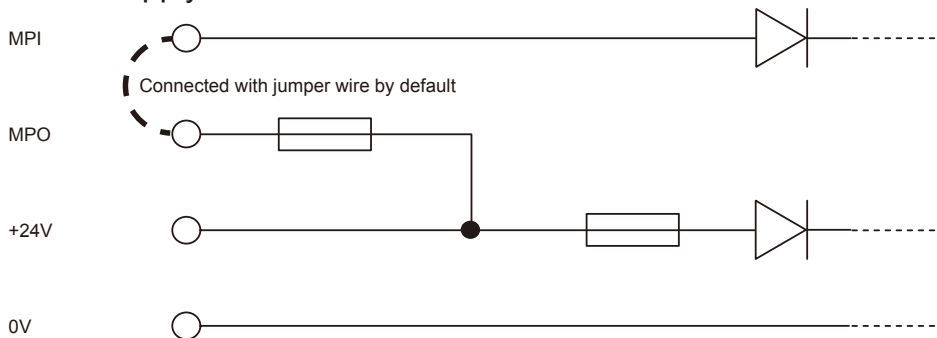
## Power supply circuit

### Power specifications

Descriptions	Specifications
Power voltage	24 VDC $\pm$ 10%
Max. instantaneous current*	ERL2-45/ESD2-35, 45: 3.0A ERL2-60/ESD2-55: 4.3A

\*: Includes when teaching pendant is connected.

### Power supply circuit

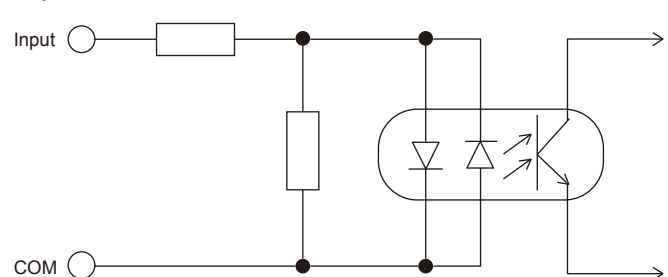


## I/O circuit

### Input specification

Descriptions	Specifications
Input no.	7 point (EC07) 10 point (EC63)
Input voltage	24 VDC $\pm$ 10%
Input current	3mA/1 points
Input current when turned ON	2mA (MIN)
Input current when turned OFF	0.5mA (MAX)

### Input circuit

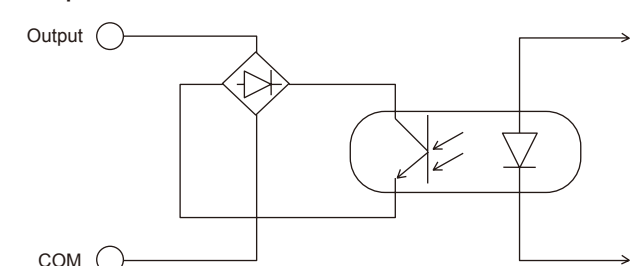


The input is non-polar.  
(For input COM, either of + or - can be used.)

### Output specifications

Descriptions	Specifications
No. of output points	7 point (EC07): 12 point (EC63)
Load voltage	24 VDC $\pm$ 10%
Load current	10 mA or less/1 point
Internal voltage drop	6V or less (under 25°C)*1
Leakage current	10 $\mu$ A
Output short-circuit protection circuit	Selected
Connecting load	PLC

### Output circuit



Output is non-polar.  
(COM is available for both + and -.)

\*1: At 40°C, it is 6V or less with 9mA load current.