

ACON-CY,SE,PL/PO PCON-CY,SE,PL/PO

First Step Guide Seventh Edition

Thank you for purchasing our product.

Make sure to read the Safety Guide and detailed Instruction Manual as well as this First Step Guide to ensure correct use. This Instruction Manual is original.

Warning : Read the instruction manual carefully and follow the instruction manual when handling this equipment. Please download the user's manual from our website. You can download it free of charge. User registration is required for first time users.
 URL: www.iai-robot.co.jp/data_dl/CAD_MANUAL/
 Keep a printout of the introduction manual near the equipment in which this product is installed so that it can be checked at all times, or display it on your computer, tablet terminal, etc. so that you can check it immediately.
 If you need a bound copy of the instruction manual, order it from the nearest sales office listed in the First Step Guide or at the end of the instruction manual. It will be provided for a fee.

- Using or copying all or part of this Instruction Manual without permission is prohibited.
- The company names, names of products and trademarks of each company shown in the sentences are registered trademarks.

Product Check

This product is comprised of the following parts if it is of standard configuration. If you find any fault in the contained model or any missing parts, contact us or our distributor.

1. Parts

No.	Part Name	Model
1	Controller	Refer to "How to read the model label" and "How to read the model of the controller."
Accessories		
2	I/O cable for ACON-CY, PCON-CY	CB-PAC-PIO*** (***) indicates the cable length.) Attached to ACON-CY and PCON-CY
	I/O cable for ACON-PL/PO, PCON-PL/PO	CB-PACPU-PIO*** (***) indicates the cable length.) Attached to ACON-PL/PO and PCON-PL/PO
3	First Step Guide	ME0201
4	Safety Guide	M0194

2. Teaching Tool

The PC software or teaching pendant is necessary to perform setup operations such as position and parameter settings through teaching or other means. Prepare any PC software or teaching pendant.

No.	Part Name	Model
1	PC software	RCM-101-MW
2	PC software	RCM-101-USB
3	Teaching pendant	CON-T
4	Teaching pendant	CON-TG
5	Teaching pendant	CON-PT
6	Teaching pendant (with deadman switch)	CON-PD
7	Teaching pendant (with deadman switch + TP adapter (RCB-LB-TG))	CON-PG
8	Simple teaching pendant	RCM-E
9	Data setter *1	RCM-P
10	Touch Panel Display *2	RCM-PM-01

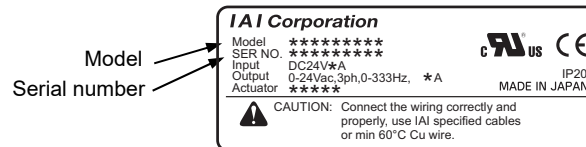
*1 For the data setter, the actuator can not be moved.

*2 For the touch panel display unit, there are some parameters that can not be set.

3. Instruction Manuals related to this product

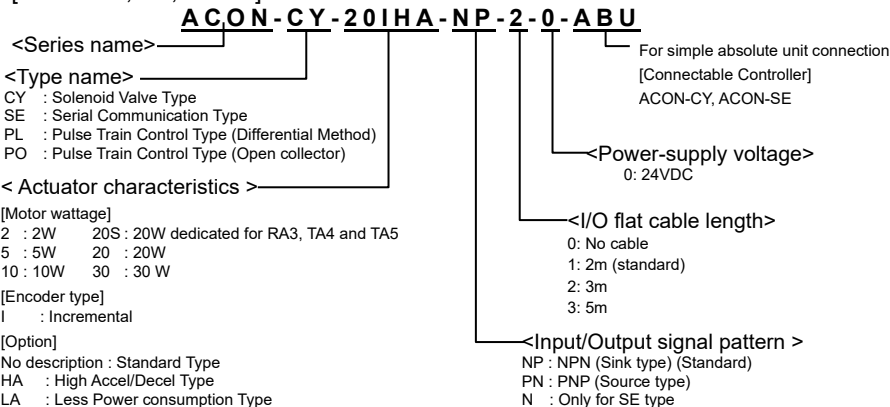
No.	Name	Manual No.
1	ACON-CY, SE, PL/PO Controller Instruction Manual	ME0167/ME0171/ME0166
2	PCON-CY, SE, PL/PO Controller Instruction Manual	ME0156/ME0163/ME0164
3	PC Software	RCM-101-MW/RCM-101-USB
4	Teaching Pendant	CON-T/TG
5	Teaching Pendant	CON-PT/PD/PG
6	Teaching Pendant	RCM-T/TD
7	Simple Teaching Pendant	RCM-E
8	Data Setter	RCM-P
9	Touch Panel Display	RCM-PM-01
		ME0182

4. How to read the model label

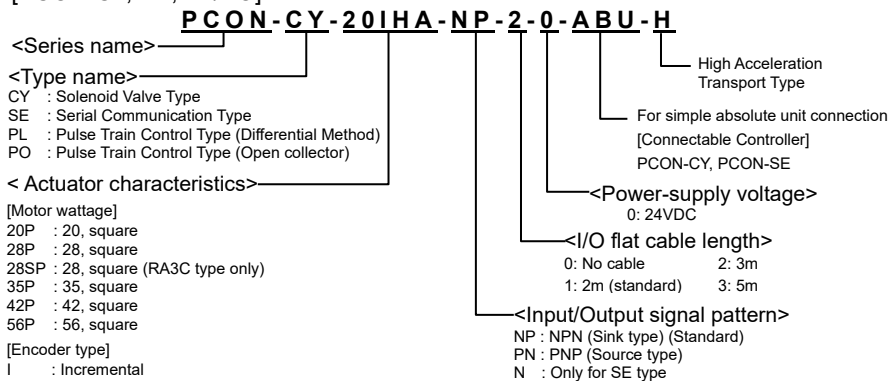


5. How to read the model of the controller

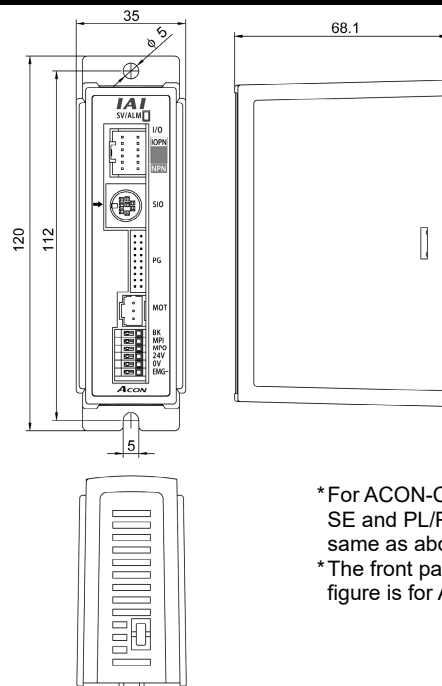
[ACON-CY, SE, PL/PO]



[PCON-CY, SE, PL/PO]



External Dimensions



*For ACON-CY, SE, PL/PO, PCON-CY, SE and PL/PO, the dimensions are the same as above.

*The front panel shown in the above figure is for ACON-CY.

Basic Specifications

Characteristics

[ACON-CY, PCON-CY]

In these position controllers with three positioning points, the same control as in the air cylinder is available.

[ACON-SE, PCON-SE]

These position controllers can be controlled with the serial communication RS485 (complying with Modbus Protocol).

[ACON-PL/PO, PCON-PL/PO]

These controllers are controlled with the pulse train input.

ACON Specifications (Controller for RCA2/RCA/RCL Series)

[Common Specifications]

Specification Item			ACON-CY, SE, PL/PO			
Number of control Axes			1 axis/unit			
Supply voltage			24VDC ±10%			
Motor Power Capacity *1	Actuator	Motor Type	Standard Type High Accel/Decel Type		Power consumption Type	
	RCA/ RCA2	10W	1.3	4.4	1.3	2.5
		20W [Model No. : 20]	1.3	4.4	1.3	2.5
		30W	1.3	4.4	1.3	2.2
		20W [Model No. : 20S] Dedicated to RA3, RA4 and TA5 Types	1.7	5.1	1.7	3.4
		RCL	2W	0.8	4.6	
	5W		1.0	6.4		
	10W		1.3	6.4		
	Heating value			8.4W		
Encoder resolution	RCA		800Pulse/rev			
	RCA2	RCA2-□□□N	1048 Pulse/rev			
		Excluding RCA2-□□□N	800 Pulse/rev			
	RCL	RA1L·SA1L·SA4L·SM4L	715 Pulse/rev			
		RA2L·SA2L·SA5L·SM5L	855 Pulse/rev			
RA3L·SA3L·SA6L·SM6L		1145 Pulse/rev				
LED indicators			SV (Green) - Servo ON, ALM (Red) - Alarm present			
Forced release of electromagnetic brake			24V impressed on the BK terminal on the power terminal board			
Cable length			Actuator cable: 20m or less			
Insulation strength			500VDC 10MΩ			
Environment	Surrounding air temperature		0 to 40°C			
	Surrounding humidity		85%RH or less (non-condensing)			
	Surrounding environment		Refer to Installation Environment.			
	Surrounding storage temperature		-10 to 65°C			
	Surrounding storage humidity		90%RH or less (non-condensing)			
	Vibration Durability		10 to 57Hz in XYZ directions/Pulsating amplitude 0.035mm (continuous), 0.075mm (intermittent) 57 to 150Hz/4.9 m/s ² (continuous), 9.8m/s ² (intermittent)			
Protection class			IP20			
Cooling method			Natural air-cooling			
Weight			128g or less			
External dimensions			35W × 120H × 68.1D (mm)			

[Individual Specifications]

Specification Item	ACON-CY	ACON-SE	ACON-PL/PO
Positioning Command	Position number specification 3	No. of Positions Specification Value Specification Simplified Direct Value/No. of Positions Specification	
Backup Memory	Serial EEPROM Rewrite limit of 100,000 times (Refer to the Note). Position data and parameters are saved in the nonvolatile memory.		Parameters are saved in nonvolatile memory.
Maximum Input Pulse Frequency			MAX. 60kpps (Open collector) MAX. 200kpps (Differential Method)
Command Pulse Magnifications (Electronic Gear: $\frac{A}{B}$)			A, B=1 to 4096 $\frac{1}{50} < \frac{A}{B} < \frac{50}{1}$ (Parameter Setting)
PIO Interface Power Supply	24VDC±10% (Externally supplied)		24VDC±10% (Externally supplied)
Serial Communication Interface	Teaching Pendant PC Software	RS485 1ch (Complying with ModBus Protocol) RTU or ASCII	Teaching Pendant PC Software
I/O cable length	10m or less		Open collector: 2m or less Differential Method: 10m or less
Communication Cable Length		Total Cable Length: 100m or less	

- *1 The rush current, which is approx. 5 to 12 times the rated current, flows for approx. 1 to 2msec after power-on. Please note that the rush current value varies depending on the impedance of the power line.
- *2 The current becomes maximum when the excitation phase of the servo-motor is detected, which is performed during the initial servo-motor ON processing after the power is injected. (Normal: Approx. 1 to 2sec, Max.: 10sec)

As a +24V DC power supply, select the power supply of the "peak load support" specification or one with sufficient capacity. In particular, in the case of the unit with the remote sensing function, the greatest care is required.

NOTE : Position data and parameters are written to EEPROM. Please note that the rewrite limit is around 100,000 times.

PCON Specifications (Controller for RCP3/RCA2 Series)

[Common Specifications]

Specification Item		PCON-CY, SE, PL/PO	
Number of control Axes		1 axis/unit	
Supply voltage		24VDC±10%	
Power-source capacity *1	Actuator	Rated	Peak *2
	20,28P Motor	0.4A	2.0A
	35,42,56P Motor	1.2A	
Heating value		9.6W	
Control method		Weak field-magnet vector control	
Encoder resolution		Incremental specification 800P/rev	
LED indicators		SV (Green) - Servo ON, ALM (Red) - Alarm present	
Forced release of electromagnetic brake		24V impressed on the BK terminal on the power terminal board	
Cable length		Actuator cable: 20m or less	
Insulation strength		500VDC 10MΩ	
Environment	Surrounding air temperature	0 to 40°C	
	Surrounding humidity	85%RH or less (non-condensing)	
	Surrounding environment	Refer to Installation Environment.	
	Surrounding storage temperature	-10 to 65°C	
	Surrounding storage humidity	90%RH or less (non-condensing)	
	Vibration Durability	10 to 57Hz in XYZ directions/Pulsating amplitude 0.035mm (continuous), 0.075mm (intermittent) 57 to 150Hz/4.9m/s ² (continuous), 9.8m/s ² (intermittent)	
Protection class		IP20	
Cooling method		Natural air-cooling	
Weight		128g or less	
External dimensions		35W × 120H × 68.1D (mm)	

[Individual Specifications]

Specification Item	PCON-CY	PCON-SE	PCON-PL/PO
Positioning Command	Position number specification 3	No. of Positions Specification Value Specification Simplified Direct Value/No. of Positions Specification	
Backup Memory	Serial EEPROM Rewrite limit of 100,000 times (Refer to the Note). Position data and parameters are saved in the nonvolatile memory.		Parameters are saved in nonvolatile memory.
Maximum Input Pulse Frequency			MAX. 60kpps(Open collector) MAX. 200kpps (Differential Method)
Command Pulse Magnifications (Electronic Gear: $\frac{A}{B}$)			$A, B=1$ to 4096 $\frac{1}{50} < \frac{A}{B} < \frac{50}{1}$ (Parameter Setting)
PIO Interface Power Supply	24VDC±10% (Externally supplied)		24VDC±10% (Externally supplied)
Serial Communication Interface	Teaching Pendant PC Software	RS485 1ch (Complying with ModBus Protocol) RTU or ASCII	Teaching Pendant PC Software
I/O cable length	10m or less		Open collector:2m or less Differential Method:10m or less
Communication Cable Length		Total Cable Length: 100m or less	

- *1 The rush current, which is approx. 5 to 12 times the rated current, flows for approx. 1 to 2msec after power-on. Please note that the rush current value varies depending on the impedance of the power line.
- *2 After the servo-motor is turned on, the excitation detection operation is performed. Excitation phase detection is performed after power-on. In such a case, the current becomes maximum (normally 100msec).
However, a current of approx. 6.0A flows (for approx. 1 to 2msec) if the motor driving power is turned on again after its shutdown.



As a +24V DC power supply, select the power supply of the "peak load support" specification or one with sufficient capacity. In particular, in the case of the unit with the remote sensing function, the greatest care is required.



NOTE :

Position data and parameters are written to EEPROM. Please note that the rewrite limit is around 100,000 times.

Installation Environment

This product is capable for use in the environment of pollution degree 2*1 or equivalent.

*1 Pollution Degree 2 : Environment that may cause non-conductive pollution or transient conductive pollution by frost. (IEC60664-1)

1. Installation Environment

Do not use this product in the following environment.

- Location where the surrounding air temperature exceeds the range of 0 to 40°C
- Location where condensation occurs due to abrupt temperature changes
- Location where relative humidity exceeds 85%RH
- Location exposed to corrosive gases or combustible gases
- Location exposed to significant amount of dust, salt or iron powder
- Location subject to direct vibration or impact
- Location exposed to direct sunlight
- Location where the product may come in contact with water, oil or chemical droplets
- Environment that blocks the air vent [Refer to Installation and Noise Elimination Section]

When using the product in any of the locations specified below, provide a sufficient shield.

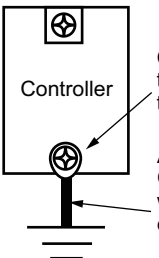
- Location subject to electrostatic noise
- Location where high electrical or magnetic field is present
- Location with the mains or power lines passing nearby

2. Storage and Preservation Environment

The storage and preservation environment should comply with the same standards as those for the installation environment. In particular, when the machine is to be stored for a long time, pay close attention to environmental conditions so that no condensation forms. Unless specially specified, moisture absorbency protection is not included in the package when the machine is delivered. In the case that the machine is to be stored and preserved in an environment where condensation is anticipated, take the condensation preventive measures from outside of the entire package, or directly after opening the package.

Installation and Noise Elimination

1. Noise Elimination Grounding (Frame Ground)

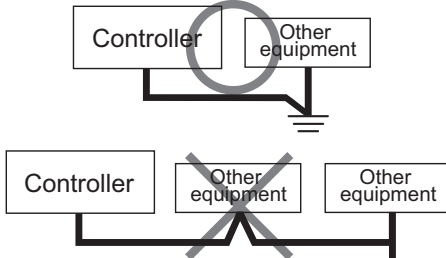


Ground Terminal

Connect the ground wire to the mounting screw of the controller.

Annealed copper wire:
Connect a ground wire with a diameter of 1.6mm or larger.

Class D grounding
(Formerly Class-III grounding:
Grounding resistance at 100Ω or less)



Do not share the ground wire with or connect to other equipment.
Ground each controller.

2. Precautions Regarding Wiring Method

- Use a twisted cable for connection to the 24V DC power supply.
- Separate signal lines and encoder cables from high-power lines such as the power wire.

3. Noise Sources and Elimination

Carry out noise elimination measures for power devices on the same power path and in the same equipment.

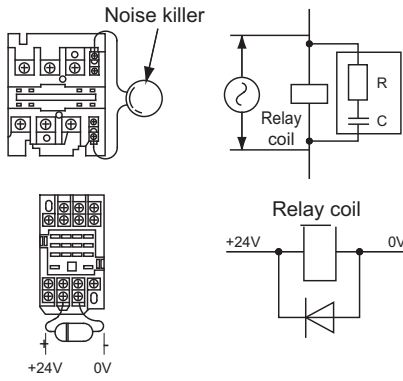
The following are examples of measures to eliminate noise sources:

- AC solenoid valves, magnet switches and relays

[Measure] Install a Noise killer parallel with the coil.

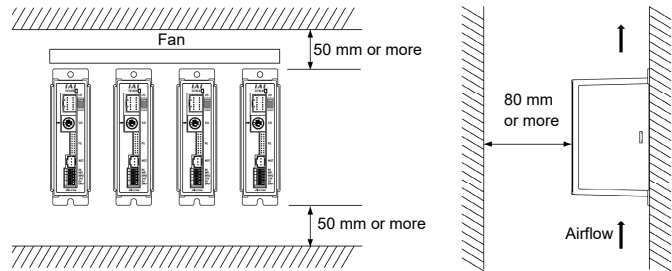
- DC solenoid valves, magnet switches and relays

[Measure] Install a diode parallel with the coil. Use a DC relay with a built-in diode.



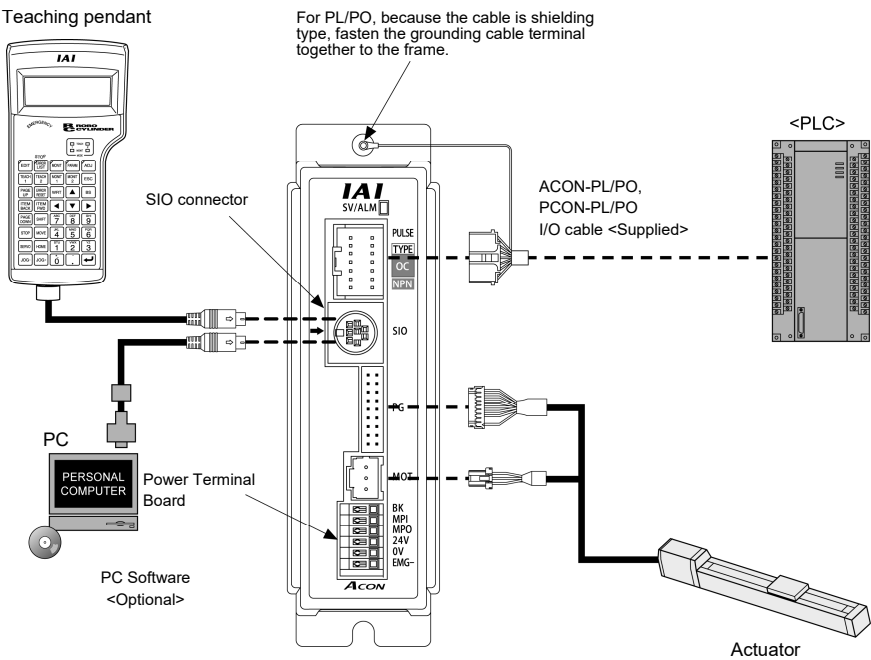
4. Heat Radiation and Installation

Conduct design and manufacture in consideration of the control box size, controller layout and cooling in such a way that the temperature around the controller will be 40°C or less.



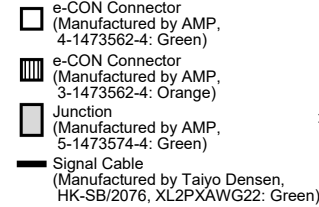
Connection Diagram

[ACON-CY, PL/PO, PCON-CY, PL-PO]

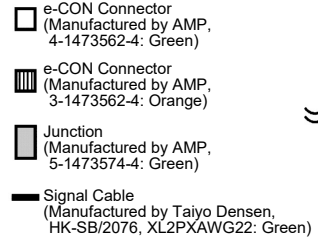


The above is an example in ACON-PL/PO. For ACON-CY, PCON-CY and PCON-PL/PO, the same wiring arrangement is applied.

In the case of using the SIO converter:

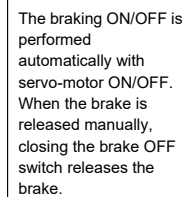


In the case of using the gateway unit:



- Turn off the power to the controller before inserting or removing the connector for connection between the teaching pendant and controller. Inserting or removing the connector while the power is turned ON causes a controller failure.
- Turning off the PORT switch enables the gateway unit or SIO converter to be attached or removed.

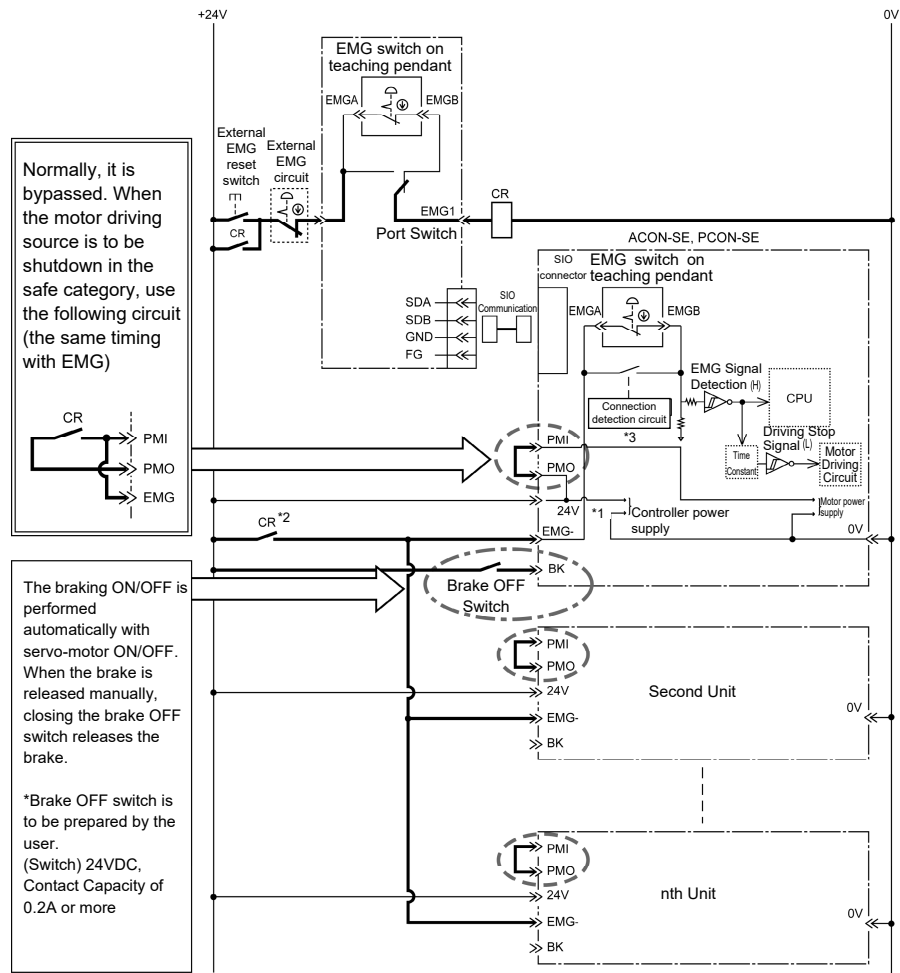
Shown is an example when two or more controllers on the whole system emergency stop circuit, are stopped in an emergency. In the case of the teaching pendant emergency stop, the emergency stop for the whole system is not available.



- *1 For the load current for a controller, refer to the specification list.
- *2 The input current for the EMG-Terminal for a controller should be 5mA. When the relay contact CR is connected to the EMG-Terminals of two or more controllers, confirm the relay contact capacity.
- *3 When the teaching pendant is connected to the controller, the controller automatically recognizes it.

- When the power circuit is to be shut down, do not do it because the cable is connected to the inner grounding line on the 0V side.
- When the SIO converter and gateway unit are used, use the common power unit or common 0V.

In the case of the teaching pendant emergency stop, when the emergency stop for the whole system is to be performed, use the SIO converter.
In the case of using the gateway unit, the teaching pendant emergency stop switch function is reflected.



Notes for Power/Emergency Stop Circuit

*1 For the load current for a controller, refer to the specification list.

*2 The input current for the EMG-Terminal for a controller should be 5mA. When the relay contact CR is connected to the EMG-Terminals of two or more controllers, confirm the relay contact capacity.

*3 When the teaching pendant is connected to the controller, the controller automatically recognizes it.

I/O Signals

Function description for I/O Signals : PCON-CY, PL/PO, ACON-CY, PL/PO

Category	Signal Abbreviation	Signal Name	Function Description
Input	RES	Reset signal	An alarm will be reset when this signal is turned ON.
	SON	Servo ON signal	The servo remains ON while this signal is ON, or OFF while this signal is OFF.
	HOME	Home return signal	The controller will perform home return operation when this signal is turned ON.
	JOG+	Jog signal	The actuator will jog toward the direction upon detection of an OFF→ON rise edge of this signal.
	ST0-ST2	Start position command	In the electromagnetic valve mode, the actuator will move to the specified position when this signal is ON. (The start signal is not required)
	TL	Torque Control Selection Signal	While this signal is ON, the motor torque is controlled with the value set in the parameter settings. When the torque reaches the set value, the TLR signal is turned ON.
Output	DCLR	Deviation Counter Clear Signal	While this signal is ON, the positional deviation counter is continuously cleared.
	INP	Positioning completion signal	This signal will turn ON when the target position has been reached after movement and the actuator has entered the in-position range. The INP signal will turn OFF if the position deviation exceeds the in-position range. INP can be selected by the parameter.
	HEND	Home return completion signal	This signal will turn ON when home return has been completed.
	PZONE	Position zone signal	This signal will turn ON when the current actuator position enters the range specified the position data after position movement. The combined use with ZONE 1 is possible, but PZONE becomes effective only for movement to the set position.
	*ALM	Controller alarm status signal	This signal remains ON in normal conditions of use and turns OFF when an alarm is generated.
	SV	Servo ON status signal	This signal will remain ON while the servo is ON.
	PE0-PE2	Current position number signal	In the electromagnetic valve mode, this signal will turn ON when the actuator completes moving to the target position.
	LS0-LS2	Limit switch output signal	This signal will turn ON when the current actuator position enters the positioning band of the target position. It will be output even before the movement command if home return has been completed.
	TLR	Torque Under Control Signal	While the torque is being controlled, when the motor torque reaches the set value it is turned ON with the TL signal.
	TRQS	Torque level status signal	This signal will be output when the slider (rod) collides against an obstacle during push & hold operation and the motor current value reaches the parameter.

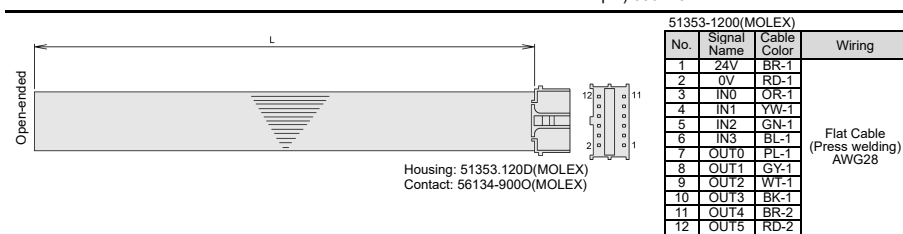
I/O Signals : PCON-CY, ACON-CY

Pin No.	Category	Number of positioning points Zone signal Position zone signal	Parameter (PIO) Pattern Selection	
			0	1
			Electromagnetic valve mode 1	Electromagnetic valve mode 2
1	24V			
2	0V			
3	Input	IN0	ST0	ST0
4		IN1	ST1(JOG+)	ST1(JOG+)
5		IN2	ST2(RES)	ST2(RES)
6		IN3	SON	SON
7	Output	OUT0	LS0	PE0
8		OUT1	LS1(TRQS)	PE1(TRQS)
9		OUT2	LS2(-)	PE2(-)
10		OUT3	SV	PZONE
11		OUT4	HEND	HEND
12		OUT5	*ALM	*ALM

(NOTE) The terms inside parentheses indicate functions before home return.

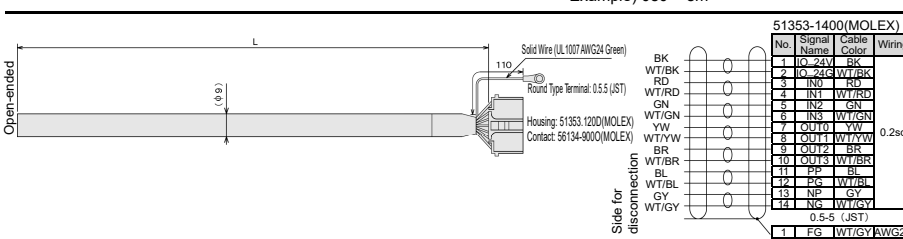
I/O Cable for ACON-CY

Model: CB-PACY-PIO



I/O Cable for ACON-PL/PO, PCON-PL/PO

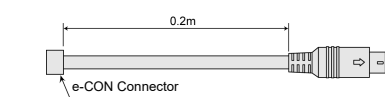
Model: CB-PACPU-PIO



Controller Link Cable

Model: CB-RCB-CLT002

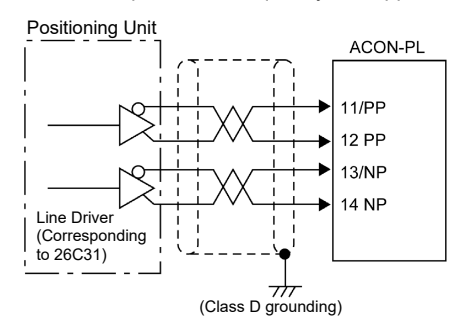
(e-CON Connector and Junction equipped with the Terminal Resistance)



BR: Brown, RD: Red, OR: Orange, YW: Yellow, GN: Green, BL: Blue, PL: Purple, GY: Gray, WT: White, BK: Black

Command Pulse Train Interface for ACON-PL and PCON-PL (Differential Method)

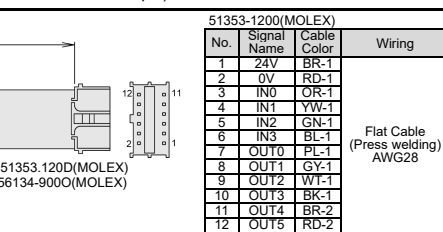
Maximum Input Pulse Frequency: 200kpps



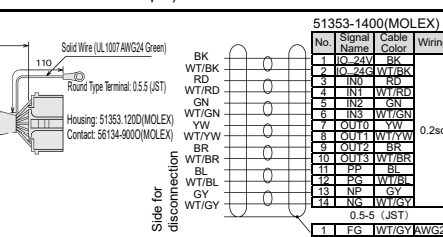
I/O Signals : PCON-PL/PO, ACON-PL/PO

Pin No.	Category	Number of positioning points Zone signal Position zone signal	Parameter (PIO) Pattern Selection	
			0	1
			Standard Mode	Push Mode
1	24V			
2	0V			
3	Input	IN0	SON	SON
4		IN1	TL	TL
5		IN2	HOME	HOME
6		IN3	RES	RES/DCLR
7	Output	OUT0	SV	SV
8		OUT1	INP	INP/TLR
9		OUT2	HEND	HEND
10		OUT3	*ALM	*ALM
11	Input		*PP	*PP
12			PP	PP
13			*NP	*NP
14			NP	NP

* Enter the cable length (L) in (up to 10m)
Example) 080 = 8m



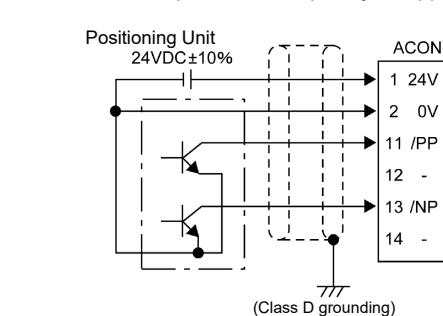
* Enter the cable length (L) in (up to 10m)
Example) 080 = 8m



Color	Signal	No.	No.	Signal	Color
YW	SGA	1	1	SGA	YW
OR	SGB	2	2	SGB	OR
BL	GND	3	3	+5V	
		4	4	ENBL	
		5	5	EMGA	
		6	6	+24V	
		7	7	GND	BL
		8	8	EMGB	

Command Pulse Train Interface for ACON-PO and PCON-PO (Open collector)

Maximum Input Pulse Frequency: 60kpps



NOTE : Sometimes, the Open collector output unit has a built-in pull-up resistance. In such case, remove the pull-up resistance.

Starting Procedures

When using this product for the first time, pursue work while making sure to avoid omission and incorrect wiring by referring to the procedure below. For ACON-CY, SE, PCON-CY and SE, follow the steps 1 through 9, for ACON-PL/PO and PCON-PL/PO, follow the steps 1 through 4 and steps 10 through 15.

1. Check of Packed Items

Check packed items with the packing list. Should there be any incorrect model or insufficient item, contact your dealer.

2. Installation

Install the controller and actuator.

3. Wiring

Connect the 24V input power unit, earth cable, emergency stop circuit, motor driving source, motor cable, encoder cable and I/O cable (for ACON-CY, PL/PO, PCON-CY and PL/PO) or communication cable (for ACON-SE and PCON-SE).

4. Power Supply and Alarm Check

- Connect to the PC or teaching pendant.
 - After confirming that the emergency stop circuit is not activated, supply the input power.
 - When the controller functions properly:
 - The monitor LED [SV/ALM] illuminates for 2 seconds and then goes out.
 - When an alarm generates:
 - The monitor LED [SV/ALM] illuminates in red.
- After checking the contents of the alarm using the PC or teaching pendant, remove the cause.

[In the case of ACON-CY, SE, PCON-CY or SE]

5. PIO Pattern and Safety Speed Settings

- Select [Teaching mode 1: Enable safety speed/Inhibit PIOs] in the MANU operation mode of the PC or teaching pendant.
- In the case of ACON-CY or PCON-CY, select the PIO pattern.
 - Parameter No. 25, PIO pattern selection:
 - 0 : Electromagnetic valve mode 1 1 : Electromagnetic valve mode 2
- Set the safety speed as needed.
 - Parameter No. 35
 - The default value of the safety speed is 100 mm/sec or less.

6. Servo ON

- In the case of the PCON controller, confirm that the slider or rod is not contacting the mechanical end.
 - If the slider or rod is contacting the mechanical end, move it away in the opposite direction.

NOTE:

- When the actuator is equipped with the brake, close the brake release switch to release the brake before moving the slider/rod. At that time, do not allow the work to drop suddenly due to its own weight. Otherwise, your hand may be caught by the dropped work or work itself may be damaged.
- In the case of vertical installation, if the servo-motor is turned OFF or ON repeatedly at the same position, it might be lowered slightly due to its own weight.

- In the case of ACON-CY or PCON-CY, turn ON the servo-motor using a PC or the teaching pendant. In the case of ACON-SE or PCON-SE, when the emergency stop is cancelled after turning on the power, the servo-motor is turned ON automatically.
 - If the actuator achieves servo lock and monitor LED "SV/ALM" illuminates in green, the controller is functioning properly.

7. Check of Safety Circuit

Check that the emergency stop circuit (or motor drive-power cutoff circuit) operates normally to turn off the servo.

8. Target Position Setting

Set a target position in the "Position" field for each position in the position table.

When carrying out direct teaching, perform home return operation first.

However, in the case of executing the direct movement command in the serial communication, target position setting is not required.

To ensure safety, it is recommended that safety speed be enabled during initial movements.

9. Trial Run Adjustment

- Disable the safety speed with the PC software or teaching pendant and perform operation check for each position.
- When using a PC or teaching pendant, select "Monitor Mode 2: Safety Speed Disabled/PIO Startup Allowed" in the MANU mode and separate it from the controller.
- Output a pulse train from the PLC to the controller to perform system operation check.
- When the ACON-SE or PCON-SE is operated through the serial communication, after setting the communication speed and axis No., disable the PIO startup using the command.
 - When the PIO is not disabled, the operation through the serial communication is not available. (Refer to the instruction manual for ROBO CYLINDER series, PCON, ACON, SCION, and ERC2, Serial Communication (Modbus Version)).
- If vibration or abnormal noise occurs during the trial run, check that the actuator installation is correct and the actuator use conditions have not exceeded the specified values, etc.

[In the case of ACON-PL/PO, PCON-PL/PO]

10. PIO Pattern

Select the PIO pattern.

Parameter No. 25, PIO pattern selection

0: Standard mode 1 1: Push mode 2

11. Set the electronic gear

Determine the unit movement amount for the actuator per pulse in the command pulse train input and set the electronic gear.

Do not set the minimum movement unit out of the encoder resolution ability.

For electronic gear ratio, reduce as much as possible.

12. Command Pulse Train Input Mode Setting

Set the pulse train input form for the command pulse input (PP/PP, NP/NP).

(Pulse Train Input Form Selection Items)

- Positive Logic, Negative Logic
- Normal Rotation Pulse Train, Reverse Rotation Pulse Train, Pulse Train Symbol, A/B Pulse Train

When using the PC or teaching pendant, after the setting,

select "Monitor Mode 2: Safety Speed Disabled/PIO Startup Allowed" in the

MANU mode and separate it from the controller.

13. Servo ON

(1) In the case of the PCON controller, confirm that the slider or rod is not contacting the mechanical end.

If slider or rod is contacting the mechanical end, move it away in the opposite direction.



NOTE:

- When the actuator is equipped with the brake, close the brake release switch to release the brake before moving the slider/rod. At that time, do not allow the work to drop suddenly due to its own weight. Otherwise, your hand may be caught by the dropped work or work itself may be damaged.
- In the case of vertical installation, if the servo-motor is turned OFF or ON repeatedly at the same position, it might be lowered slightly due to its own weight.

(2) Input a servo ON signal from the PLC.

If the actuator achieves servo lock and monitor LED "SV/ALM" illuminates in green, the controller is functioning properly.

14. Check of Safety Circuit

Check that the emergency stop circuit (or motor drive-power cutoff circuit) operates normally to turn off the servo.

15. Trial Run Adjustment

(1) Output a movement command from the PLC to the controller to perform system operation check.

(2) If vibration or abnormal noise occurs during the trial run, check that the actuator installation is correct, the actuator use conditions have not exceeded the specified values, and appropriate pulse trains have been input, etc.



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