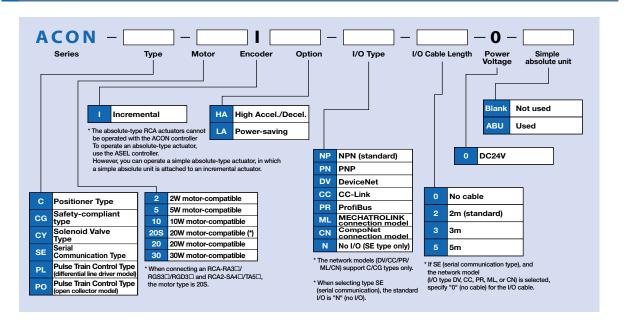


List of models

This position controller enables movement of the RCA2/RCA series actuators. A line-up of 5 types to support various controlling methods.

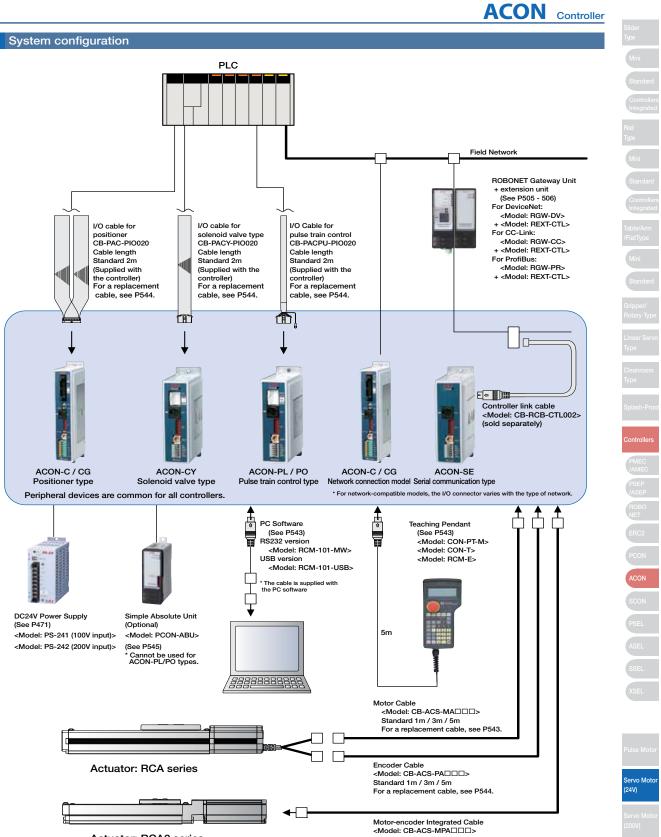
Туре	С	CG	CY	PL/PO	SE
Name	Positioner type	Safety category compatible type	Solenoid valve type	Pulse train control type	Serial Communication Type
External view					
Description	Positioner capable of a maximum of 512 points of Positioning	Conforming to type C safety category specifications	Can be operated using the same control as the air cylinder type	For pulse train control	For serial communication
Position points	512 points	512 points	3 points	(-)	64 points

Model









ACON **536**

Standard 1m / 3m / 5m For a replacement cable, see P544.



Actuator: RCA2 series

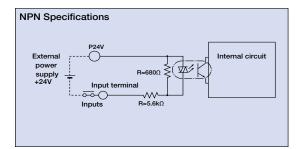
I/O Specifications

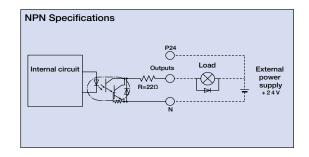
■ Input section External input specifications

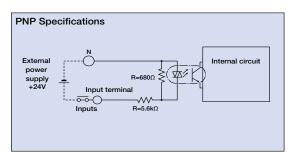
Item	Specifications
Input voltage	DC24V ±10%
Input current	4mA/circuit
Leak current	1mA max./point
Isolation method	Photocoupler

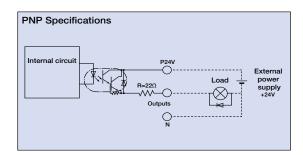
Output section	on External output specifications
Item	Specifications

Item	Specifications
Load Voltage	DC24V
Max. load current	50mA/point
Remaining voltage	2V or less
Isolation method	Photocoupler









I/O Specifications

The 4 types of controllers (C/CG, CY, PL/PO, and SE) are classified by their respective I/O specifications. Also, for the positioner type and solenoid valve type, the I/O signal information can be changed in the controller settings, so multiple functions can be effectively used.

■ Control Function by Type

Туре	C/CG	CY	PL/PO	SE	Factures
Name	Positioner type	Solenoid valve type	Pulse train control type	Serial communication type	Features
Positioner mode	0	×	×	(*1)	This is the basic operating mode, in which the user designates position numbers and inputs start signals.
Teaching mode	0	×	×	(*1)	In this mode, the slider (rod) moves based on an external signal, and the stopped positions can be registered as position data.
Solenoid valve mode	0	0	×	(*1)	The actuator can be moved simply by ON/OFF position signals. This mode supports the same control signals you are already familiar with on solenoid valves of air cylinders.
Pulse train mode	×	×	0	×	In this mode, you can operate the actuator freely without inputting position data.
Network compatible	(*2)	×	×	(*3)	The controller can be connected to a DeviceNet or CC-Link network.

- *1 Operates using network communications or serial communications.
- *2 Can make a direct connection to a field network with the network specifications.
- *3 Can be connected to a field network using a gateway unit.

537 ACON



PMEC / AMEC PSEP / ASEP ROBO NET PCON ACON SCON PSEL SSEL

Mini
Standard
Controllers
Integrated

Po
Typ

Mini
Standard

Table/Arr
//FlatTyp

Mini
Standard



Explanation of I/O Signal Functions

The table below explains the functions allocated to the controller's I/O signal.

Since the signals that can be used vary depending on the controller type and settings, check the signal table for each controller to confirm the available functions.

■ Signal Function Description

Classification	Signal abbreviations	Signal	Function description		
	CSTR	Start signal	Input this signal to cause the actuator to start moving to the position set by the command position number signal.		
	PC1 to PC256	Command position number signal	This signal is used to input a target position number (binary input).		
	BKRL	Brake forced release signal	This signal forcibly releases the brake.		
	RMOD	Running mode switching signal	This signal can switch the running mode when the MODE switch on the controller is set to AUTO. (AUTO when this signal is OFF, or MANU when the signal is ON).		
	* STP	Pause signal	Turning this signal OFF causes the moving actuator to decelerate to a stop. The actuator will resume the remaining movement if the signal is turned ON during the pause.		
	RES	Reset signal	Turning this signal ON resets the alarms that are present. If this signal is turned ON while the actuator is paused ("STP is OFF), the remaining movement can be cancelled.		
	SON	Servo ON signal	The servo remains on while this signal is ON, or off while the signal is OFF.		
	НОМЕ	Home return signal	Turning this signal ON performs home-return operation.		
Input	MODE	Teaching mode signal	Turning this signal ON switches the controller to teaching mode (provided that CSTR, JOG+ and JOG- are all OFF and the actuator is not moving).		
	JISL	JOG/INJOG switching signal	When the main signal is off, the JOG operation will be conducted for JOG+ and JOG When the signal is on, the unit will do the inching operation for JOG+ and JOG		
	JOG+, JOG-	JOG signal	When the JISL signal is off and the JOG +/- signal turns on, the unit will jog in the + (positive) direction when the JOG + turns on and the - (negative) direction when the JOG - turns on. During the JOG operation, the unit slows to a stop when the JOG +/- signal turns off.		
	PWRT	Teaching signal	In the teaching mode, specify a desired position number and then turn this signal ON for at least 20ms to write the current position to the specified position number.		
	ST0 to ST6	Start position command	Turning this signal ON in the solenoid valve mode causes the actuator to move to the specified position. (Start signal is not required)		
	TL	Torque limit selection signal	While this signal is ON, torque is limited by the value set by a parameter. The TLR signal turns on if torque has reached the specified value. (Dedicated pulse train type)		
	DCLR	Deviation counter clear signal	The position deviation counter is continuously cleared while this signal is ON. (Dedicated pulse train type)		
	PEND/INP	In position signal	This signal turns ON when the actuator has entered the positioning band after movement. If the actuator has exceeded the positioning band, PEND does not turn OFF, but INP does. PEND and INP can be swapped within parameters.		
	PM1 to PM256	Position complete signal	This signal is used to output the position number achieved at the completion of positioning (binary output)		
	HEND	Home return completion signal	This signal turns ON upon completion of home return.		
	ZONE1	Zone signal	This signal turns ON when the current actuator position has entered the range specified by the parameters.		
	PZONE	Positioning zone signal	Turns ON when actuator moves into a position within the range of the target position data that was set. PZONE can be used together with ZONE1, but PZONE is valid only during movement to a specified position.		
	RMDS	Running mode status signal	This outputs the operation mode status.		
	* ALM	Controller alarm status signal	This signal remains ON while the controller is not in the alarm condition, and turns OFF when an alarm has occurred.		
Output	MOVE	Moving signal	Turns ON while the actuator is moving (home return), including when there is push force.		
	sv	Servo ON status signal	This signal turns ON when servo is ON.		
	* EMGS	Emergency stop status signal	This signal remains ON while the controller is not in the emergency stop mode, and turns OFF once an emergency stop has been actuated.		
	MODES	Mode status signal	The mode signal input turns it ON when it goes into teaching mode. It turns OFF when it goes into normal mode.		
	WEND	Writing complete signal	This signal remains OFF after the controller has switched to the teaching mode. It turns ON upon completion of data write using the PWRT signal. If the PWRT signal is turned Off, this signal also turns OFF.		
	PE0 to PE6	Current position number signal	This signal turns ON after the controller has completed moving to the target position in the solenoid valve mode.		
	TLR	Torque limiting signal	This signal turns ON once the motor torque has reached the specified value in a condition where torque is being limited by the TL signal. (Dedicated pulse train type)		
	LSO to LS2	Limit switch output signal	Each signal turns ON when the current actuator position has entered the positioning band before or after the target position. If the actuator has already completed home return, these signals are output even before a movement command is issued or while the servo is OFF. (Dedicated Solenoid Valve Mode)		

(Note) Signals with asterisks (*) are normally ON and OFF during operation.

Slider Type

Mini

Standard

Controllers Integrated

Rod Type

Mini

Standard

Controllers Integrated

> Table/Arm /FlatType

Mini

Standard

Gripper/ Rotary Type

Type

Гуре

Splash-Proof

Controllers

/AMEC

ROBO

ERC2

PCON

ACON

SCON

POEL

ASEL

SSEL

XSEL

Pulse Moto

Servo Moto (24V)

Servo Mot

Linear Servo Moto



I/O Signal table

■ Positioner type (ACON-C / CG)

					Parameters (sel	lect PIO pattern)		
	_E		0	1	2	3	4	5
Pin	gaţi		Positioning mode	Teaching mode	256-point mode	512-point mode	Solenoid Valve Mode 1	Solenoid Valve Mode 2
No.	Classification	Positioning Points	64 points	64 points	256 points	512 points	7 points	3 points
	පී	Zone signal	0	×	×	×	0	0
		P-zone signal	0	0	0	×	0	0
1A	24V				P	24		
2A	24V				P	24		
3A	_				N	IC		
4A	-				N	ic		
5A		IN0	PC1	PC1	PC1	PC1	ST0	ST0
6A		IN1	PC2	PC2	PC2	PC2	ST1	ST1 (JOG+)
7A		IN2	PC4	PC4	PC4	PC4	ST2	ST2 (-)
8A		IN3	PC8	PC8	PC8	PC8	ST3	-
9A		IN4	PC16	PC16	PC16	PC16	ST4	-
10A		IN5	PC32	PC32	PC32	PC32	ST5	-
11A		IN6	-	MODE	PC64	PC64	ST6	-
12A	Input	IN7	-	JISL	PC128	PC128	-	-
13A		IN8	=	JOG+	-	PC256	-	-
14A		IN9	BKRL	JOG-	BKRL	BKRL	BKRL	BKRL
15A		IN10	RMOD	RMOD	RMOD	RMOD	RMOD	RMOD
16A		IN11	НОМЕ	HOME	HOME	HOME	HOME	-
17A		IN12	* STP	* STP	* STP	* STP	* STP	-
18A		IN13	CSTR	CSTR/PWRT	CSTR	CSTR	-	-
19A		IN14	RES	RES	RES	RES	RES	RES
20A		IN15	SON	SON	SON	SON	SON	SON
1B		OUT0	PM1	PM1	PM1	PM1	PE0	LSO
2B		OUT1	PM2	PM2	PM2	PM2	PE1	LS1
3B		OUT2	PM4	PM4	PM4	PM4	PE2	LS2 (-)
4B		OUT3	PM8	PM8	PM8	PM8	PE3	-
5B	-	OUT4	PM16	PM16	PM16	PM16	PE4	-
6B		OUT5	PM32	PM32	PM32	PM32	PE5	-
7B	-	OUT6	MOVE	MOVE	PM64	PM64	PE6	-
8B	Output	OUT7	ZONE1	MODES	PM128	PM128	ZONE1	ZONE1
9B	-	OUT8	PZONE	PZONE	PZONE	PM256	PZONE	PZONE
10B	-	OUT9	RMDS	RMDS	RMDS	RMDS	RMDS	RMDS
11B	-	OUT10	HEND	HEND	HEND	HEND	HEND	HEND
12B	-	OUT11	PEND	PEND/WEND	PEND	PEND	PEND	-
13B	-	OUT12	SV * FMCS	SV * FMCS	SV * FMCS	SV * FMCC	SV	SV
14B	-	OUT13	* EMGS	* EMGS	* EMGS	* EMGS	* EMGS	* EMGS
15B	-	OUT14	* ALM	* ALM	* ALM	* ALM	* ALM	* ALM
16B		OUT15	_	_			_	_
17B	-		NC NC					
18B	-					N .		
19B	0V							
20B	0V					N		

(Note) The names of signals above inside () are functions before the unit returns home. (Note) Signals with asterisks (*) are normally ON, and OFF during operation.

■ Solenoid valve type (ACON-CY)

			Parameters (sel	ect PIO pattern)
	_E		0	1
Pin	Classification		Solenoid valve mode 0	Solenoid valve mode 1
No.	Issif	Positioning Points	3 points	3 points
	ਲੱ	Zone signal	×	×
		P-zone signal	×	0
1	24V			
2	ov			
3		IN0	ST0	ST0
4		IN1	ST1 (JOG+)	ST1 (JOG+)
5	Input	IN2	ST2 (RES)	ST2 (RES)
6		IN3	SON	SON
7		OUT0	LS0	PE0
8		OUT1	LS1	PE1
9	Output	OUT2	LS2 (-)	PE2 (-)
10	Output	OUT3	sv	PZONE
11		OUT4	HEND	HEND
12		OUT5	* ALM	* ALM

(Note) The names of signals above inside () are functions before the unit returns home. (Note) Signals with asterisks (*) are normally ON, and OFF during operation.

■ Pulse Train Type (ACON-PL/PO)

			Parameters (sel	ect PIO pattern)
	5		0	1
Pin	icati		Standard mode	Push mode
No.	Classification	Positioning Points	-	-
	පී	Zone signal	×	×
		P-zone signal	×	×
1	24V			
2	0V			
3	Input	IN0	SON	SON
4		IN1	TL	TL
5		IN2	HOME	HOME
6		IN3	RES	RES / DCLR
7		OUT0	SV	sv
8	Output	OUT1	INP	INP / TLR
9	Output	OUT2	HEND	HEND
10]	OUT3	* ALM	* ALM
11			* PP	* PP
12	Input		PP	PP
13			* NP	* NP
14]		NP	NP

(Note) Signals with asterisks (*) are normally ON, and OFF during operation.

539 ACON



Type

Mini

Standard

Controllers
Integrated

Rod
Type

Mini

Standard

Controllers
Integrated

Table/Arm
/FlatType

Mini

Standard

Gripper/
Rotary Type

Cleanroom
Type

Cleanroom
Type

Controllers

PAGE
/AMEC
PSEP
/ASEP
ROBO
NET
ERG2

PCON
ACON

SCON

PSEL

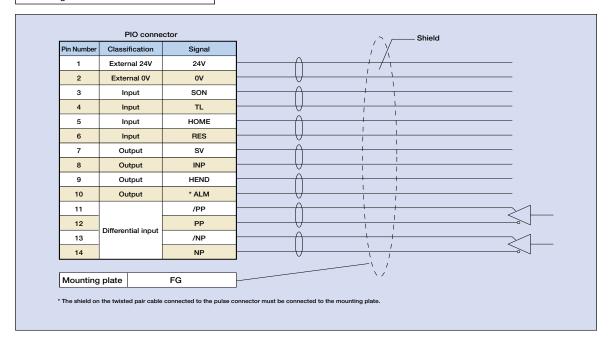
ASEL

XSEL

Wiring Diagram for the Pulse-Train Input Type

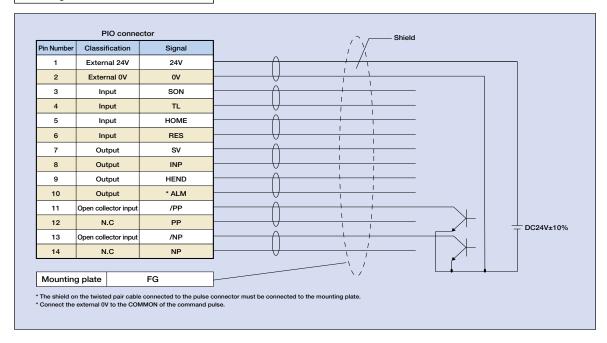
■ Differential Line Driver Method (ACON-PL)

Max. input pulse frequency : Max. 200 kpps Cable Length : Max. 10m



■ Open Collector Method (ACON-PO)

Max. input pulse frequency : Max. 60 kpps Cable Length : Max. 2m



Controllers Integrated

And

Standard

Controllers
Integrated

Fable/Arm
FlatType

Mini

Controllers

PMEC /AMEC

PSEP /ASEP

ROBO NET

ERC2

PCON

ACON

SCON

PSEL

ASEL



Command Pulse Input State

	Command pulse train state	Input terminal	During forward operation	During reversed operation	
	Forward pulse train	PP•/PP			
	Reversed pulse train	NP•/NP			
	The forward pulse	train causes the motor to rotat	e forward, and the reverse pulse train causes	the motor to rotate in reverse.	
logic	Pulse train	PP+/PP			
Negative logic	Symbols	NP•/NP	Low	High	
S	The command p	ulse is used for the amount of	motor rotation, and the command symbol is u	sed for rotational direction.	
	A/B phase pulse train	PP•/PP		1 1 1	
	A/B phase pulse train	NP•/NP			
	An A/B phase pulse with a 90	o° phase difference (multiplier i	s 4) is used to generate commands for the am	ount of rotation and rotational direction.	
	Forward pulse train	PP•/PP			
o	Reversed pulse train	NP•/NP			
Positive logic	Pulse train	PP+/PP			
Positiv	Symbols	NP•/NP	High	Low	
	A/B phase pulse train	PP+/PP			
	pacc pulse train	NP·/NP			

Table of specifications

Item			Specifi	cations		
Controller type	С	CG	CY	PL	PO	SE
Connected actuator		RCA Series Actuator				
Number of control axes			1-6	ıxis		
Operating method	Positio	ner type	Solenoid valve type	Pulse train	input type	Serial communication type
Positioning Points	512 p	oints	3 points	_		64 points
Backup memory			EEP	ROM		
I/O connector	40-pin c	onnector	12-pin connector	14-pin co	onnector	None
Number of I/O	16 input points/	16 output points	4 input points / 6 output poir	nts 4 input points/	4 output points	None
I/O power	External supply DC24V±10%			_		
Serial Communication		RS485 1ch				
Peripheral device communication cable	CB-PAC-PIO 🗆 🗆		CB-PACY-PIO	CB-PACPU	CB-PACPU-PIO □□□	
Command pulse train input method		-		Differential line driver	Open collector	_
Max. input pulse frequency (Note 1)		-		Max. 200 kpps	Max. 60 kpps	-
Position detection method			Increment	al encoder		
Drive-source cutoff relay at emergency stop	Integrated			External		
Forced release of electromagnetic brake	Brake release	switch ON/OFF	ON/OFF to	erminal signal inside the	power terminal for b	orake release
Input Voltage			DC24V	± 10%		
Dielectric strength voltage			DC500	V 1 M Ω		
Vibration resistance	XYZ directions 10 to 57Hz, One side amplitude: 0.035mm (continuous), 0.075mm (intermittent) 58 to 150 Hz 4.9 m/s² (continuous), 9.8 m/s² (intermittent)			ntermittent)		
Ambient operating temperature	$0\sim40^{\circ}\mathrm{C}$					
Ambient operating humidity	10 - 95% (non-condensing)					
Ambient operating atmosphere	Without corrosive gases					
Protection class			IP	20		
Weight	Appro	c. 300g		Approx	c. 130g	

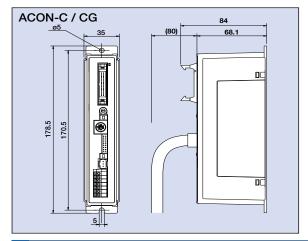
(Note 1) With the open collector specification, keep the maximum input frequency to 60 kpps or below to prevent malfunction. For applications exceeding 60kpps, use the differential line driver.

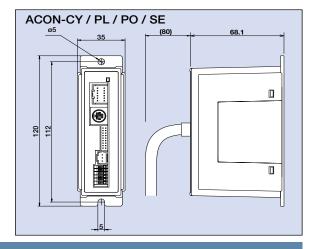
	Actuator	Motor	Standard specifications/high acce	eleration and deceleration model	Power-saving model		
	Actuator	Motor	Rated [A]	Max. [A]	Rated [A]	Max. [A]	
		10W	1.3	4.4	1.3	2.5	
Motor		20W [Model symbol: 20]	1.3	4.4	1.3	2.5	
Power	RCA	30W	1.3	4.4	1.3	2.2	
Supply Capacity (Note 2)	Supply RCA2	20W [Model symbol: 20S] SA4, RA3, TA5 Type dedicated	1.7	5.1	1.7	3.4	
		2W	0.8	4.6			
RCL		5W	1.0	6.4			
		10W	1.3	6.4			

(Note 2) Other than motor power supply capacity, increase 0.5A as control power supply. Inrush current of approx. 5 to 12 times the rated current occurs within 1 to 2 msec from turning the power on. The inrush current changes depending on the power supply line impedance.

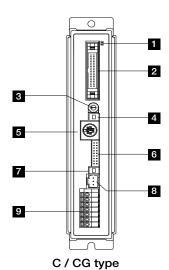


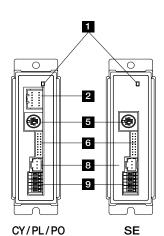
External Dimensions





Name of Each Part





Type

Type PIO connectors are: CY: 12 pin PL/PO: 14 pin

1 LED display

These LED colors indicate the condition of the controller.

Lit (green) Servo ON Lit (red) Alarm activated Unlit Servo OFF Blinking (green) Automatic servo-OFF Emergency stop

2 PIO connector

Connects a cable for communicating with a PLC or other external equipment.

3 Address-setting rotary switch

This switch sets the addresses for controllers used when the unit is linked with controllers.

4 Mode switch

Switches between manual teaching pendant operations (MANU) and automatic operations (AUTO).

Operation details

MANUAL	O commands are not accepted. Data can be written from a teaching pendant or PC.	
AUTO	I/O commands are valid, while operations from a teaching pendant or PC are not accepted. However, monitoring is possible.	

5 SIO connector

Connects a teaching pendant, PC cable, controller, or gateway unit to a controller.

Operation details

Pin No.	Signal	Name	Remarks
1	SGA	Positive side, RS485 differential signal	
2	SGB	Negative side, RS485 differential signal	
3	5V	+5V output	For RS232/485 conversion
4	ENBL	Enable signal	
5	EMGA	EMG line connection to external equipment	
6	24V	24-V power for T/P	For T/P
7	0V	GND	
8	EMGB	EMG line connection to external equipment	
9	0V	EMG line connection to external equipment ground	

6 Encoder brake connector

Connects the encoder/brake cable for the actuator.

7 Brake release switch

This switch forces the brake to release.

8 Motor connector

Connects the motor cable for the actuator.

9 Power terminal block

Main power for controller(s), emergency stop

C / CG type

Terminal number	Signal	Name		
7	S1	External drive-source cutoff for		
6	S2	TP_EMG terminal		
5	MPI	Motor drive-source cutoff terminal		
4	MPO	Motor drive-source cutoff terminal		
3	24V	Positive side of the 24-V power supply		
2	0 V	Negative side of the 24-V power supply		
1	EMG	EMG signal (application of 24 V)		

CY / PL / PO / SE type

Terminal number	Signal	Name
6	вк	BK release
5	MPI	Motor drive-source cutoff terminal
4	MPO	Motor drive-source cutoff terminal
3	24V	Positive side of the 24-V power supply
2	0V	Negative side of the 24-V power supply
1	EMG	EMG signal (application of 24 V)

Splash-Proo
Controllers
PMEC
/AMEC
PSEP
/ASEP
ROBO
NET
ERC2
PCON
ACON
SCON
PSEL



Option

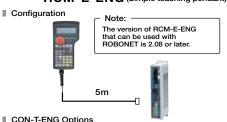
Teaching Pendant

Features This is a teaching device that provides information on functions such as position input, performing test runs, and monitoring.

■ Model CON-PT-M-ENG (Touch panel teaching

CON-T-ENG (Standard type)

RCM-E-ENG (Simple teaching pendant)



■ CON-T-ENG Options

 Wall-mounting hook Model HK-1

 Strap Model STR-1



110.0 (113.5)

Specifications

Item	CON-PT-M-ENG	CON-T-ENG	RCM-E-ENG
Data Input	0	0	0
Actuator motion	0	0	0
Ambient Operating Temp./Humidity	Temp: 0~40°C; Humidity: 85% RH or below		
Ambient Operating Atmosphere	No corrosive gases. Especially no dust.		
Protection class	IP40	IP54	_
Weight	Approx. 750g	Approx. 400g	Approx. 400g
Cable Length		5m	
Display	3-color LED touch panel with backlight	20 char. × 4 lines LCD display	16 char. × 2 lines LCD display

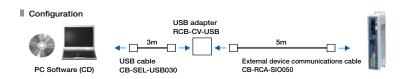
PC Software (Windows Only)

Features A startup support software for inputting positions, performing test runs, and monitoring. With enhancements for adjustment functions, the startup time is shortened.

■ Model RCM-101-MW (External device communications cable + RS232 conversion unit)



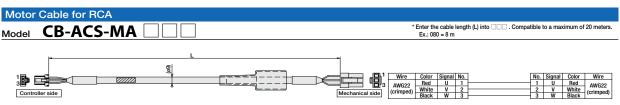
■ Model RCM-101-USB (External device communications cable + USB adapter + USB cable)





Spare parts

When you need spare parts after purchasing the product, such as when replacing a cable, refer to the list of models below.



Min. bend radius r = 50 mm or larger (when movable type is used)



ervo Moto (24V







































