ERC Quick Start Guide

1. Parts Confirmation

Please contact your sales representative if any of these parts are missing or incorrect:
- ERC Actuator: Slider type (ERC-SA6/SA7) or Rod type (ERC-RA54/RA64)
- Relay Cable: CB-ERC-PWBIO***
- CD with Manuals (PDF format)

Optional: - Teaching Pendant   - PC Software Kit   - Insulated PIO Terminal Block   - SIO Converter
                  RCA-T/E   RCB-101-MW   RCB-TU-PIO-A/B   RCB-TU-SIO-A/B

2. Installation

a. Install the Actuator.

	Slider type	Rod type			
	SA6/SA7	Flange		Foot Bracket	
		RA54	RA64	RA54	RA64
Screw diameter	M4	M5	M6	M6	M8
Standard torque for bolting	2.3Nm (0.23Kgf.m)	4.3Nm (0.44Kgf.m)	6.7Nm (0.68Kgf.m)	6.7Nm (0.68Kgf.m)	14.0Nm (1.43Kgf.m)
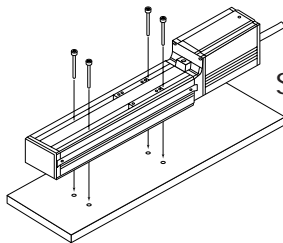
Slider type
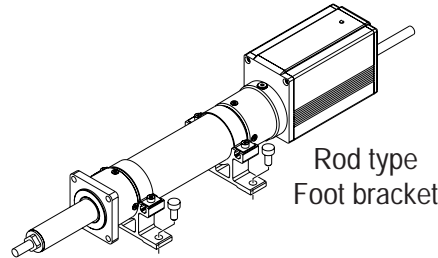
Rod type Foot bracket
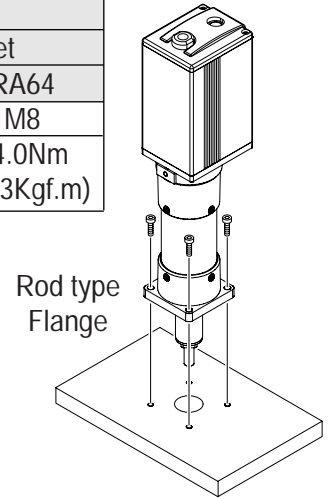
Rod type Flange

b. Mount to the Actuator.
- Slider Type: Use the 4 tapped holes (M5, depth 10mm) located on the top of the slider.
         The maximum torque for mounting is 7.5Nm (0.77Kgf.m).
- Rod Type: Be sure to use a wrench to prevent adding rotational moment
         to the rod (see picture to the right). Use a 13mm wrench for the RA54
         model and a 17mm wrench for the RA64 model.

3. Wiring

Connect the connector end of the relay cable to the actuator cable connector.
Individually connect the open ends of the cable to: (1) 24V DC control/motor power supply, (2) Emergency stop circuit, (3) I/O circuit, (4) Ground wire, (5) Brake release switch (when brake option is used).
Because the HOLD signal is a normally closed contact, it is ON during operation and OFF during pause. If there is no PLC software at the time of adjustment, change parameter #15 (refer to the last page of this Quick Start Guide). You can temporarily short it to 0V. (It becomes necessary to use the teaching pendant or PC for operation). Afterwards, you must remove this short if you plan to automatically operate it with a PLC.

4. LED Indicator for Power Supply

Before supplying 24V power, confirm that the brake release switch is OFF and that the emergency stop circuit is not operating. Supply power. The LED located on top of the motor cover should be GREEN.
A RED light indicates a cutoff in the motor power supply, or that an alarm is occurring. At this point, you should refer to the "Troubleshooting" section of your Operating Manual to resolve this problem.

LED
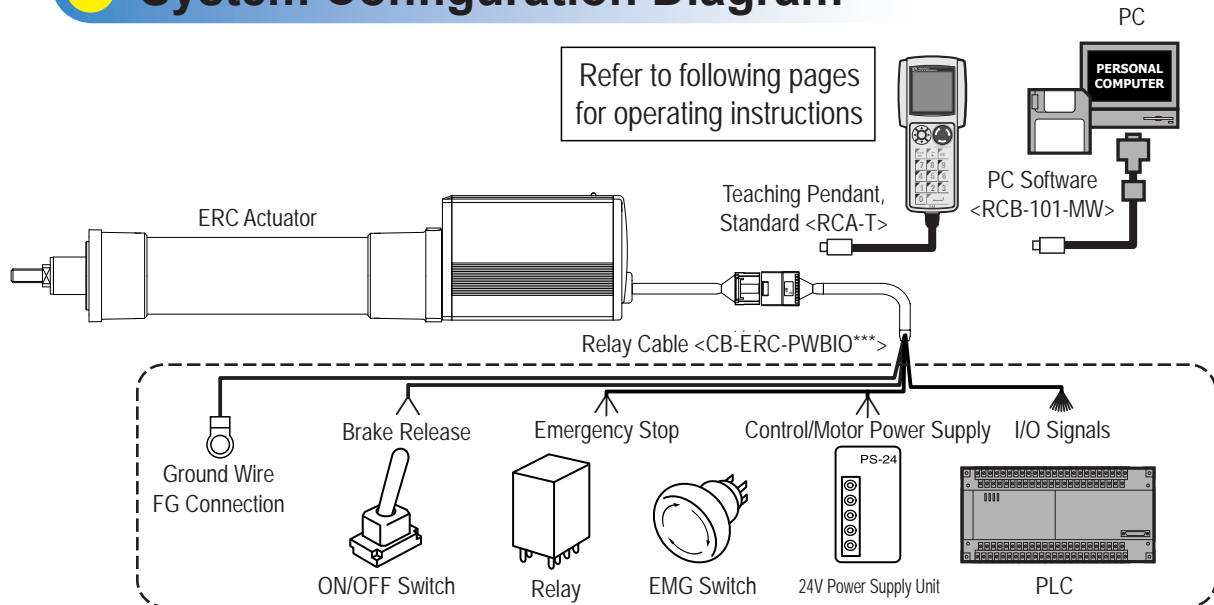

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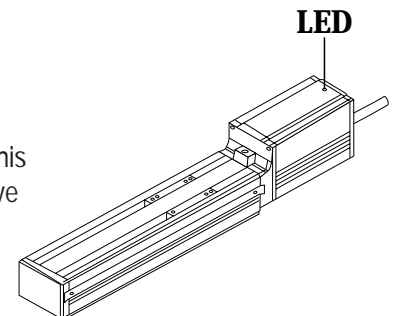
5. Input Data & Operate with PC or Teaching Pendant

Connect the teaching pendant or PC to the mini DIN connector located at the rear of the motor cover. Input desired data such as position, speed, acceleration/deleceration, position range. Other operations can be performed such as position movement verfication, direct teaching of positions, and data correction based on the load situation.
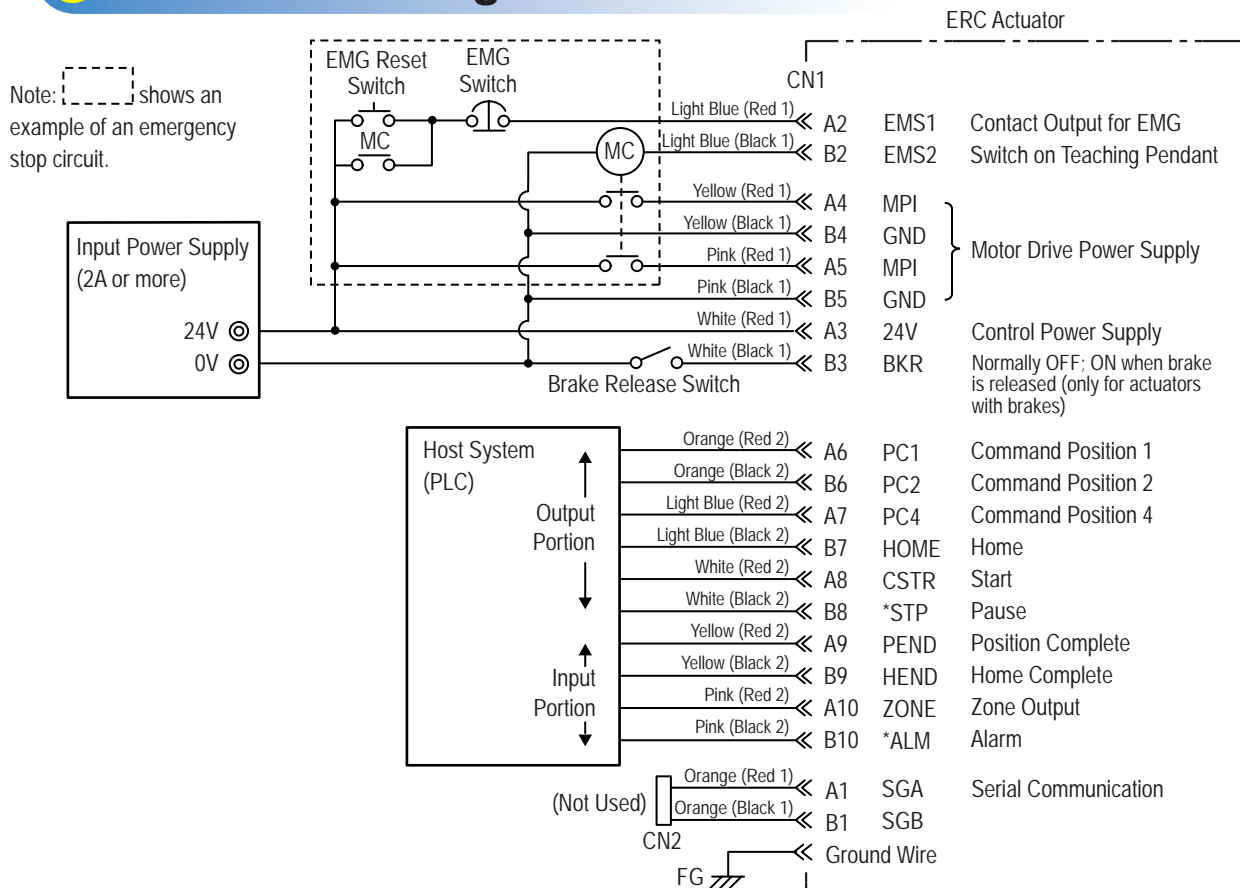
Note that during operation the Start Signal Input and Home Return are OFF, and Pause is ON.

System Configuration Diagram

PC

Refer to following pages for operating instructions

Teaching Pendant, Standard <RCA-T>

PC Software <RCB-101-MW>

ERC Actuator

Relay Cable <CB-ERC-PWBIO***>

Ground Wire FG Connection

Brake Release

Emergency Stop

Control/Motor Power Supply

I/O Signals

ON/OFF Switch

Relay

EMG Switch

PS-24

24V Power Supply Unit

PLC

Note: When using an insulated PIO terminal block, switch to a relay cable with connectors on both ends (CB-ERC-PWBIO***-H6) and connect all wires to the terminal block except for the ground wire.

Connection Diagram

Note: ⌐⌐⌐ shows an example of an emergency stop circuit.

ERC Actuator

Terminal	Signal	Description
A2	EMS1	Contact Output for EMG
B2	EMS2	Switch on Teaching Pendant
A4	MPI	
B4	GND	
A5	MPI	Motor Drive Power Supply
B5	GND	
A3	24V	Control Power Supply
B3	BKR	Normally OFF; ON when brake is released (only for actuators with brakes)
A6	PC1	Command Position 1
B6	PC2	Command Position 2
A7	PC4	Command Position 4
B7	HOME	Home
A8	CSTR	Start
B8	*STP	Pause
A9	PEND	Position Complete
B9	HEND	Home Complete
A10	ZONE	Zone Output
B10	*ALM	Alarm
A1	SGA	Serial Communication
B1	SGB	

EMG Reset Switch

EMG Switch

CN1

MC

MC

Light Blue (Red 1) — A2
Light Blue (Black 1) — B2
Yellow (Red 1) — A4
Yellow (Black 1) — B4
Pink (Red 1) — A5
Pink (Black 1) — B5
White (Red 1) — A3
White (Black 1) — B3

Input Power Supply (2A or more)

24V
0V

Brake Release Switch

Host System (PLC)

Output Portion

Orange (Red 2) — A6
Orange (Black 2) — B6
Light Blue (Red 2) — A7
Light Blue (Black 2) — B7
White (Red 2) — A8
White (Black 2) — B8

Input Portion

Yellow (Red 2) — A9
Yellow (Black 2) — B9
Pink (Red 2) — A10
Pink (Black 2) — B10

(Not Used)

Orange (Red 1) — A1
Orange (Black 1) — B1

CN2

Ground Wire

FG

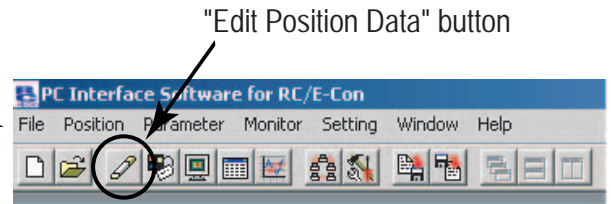## ● Operation with the PC Software or Teaching Pendant

As an example, we will set **50mm** as Position No. 1 and move the actuator to this position.
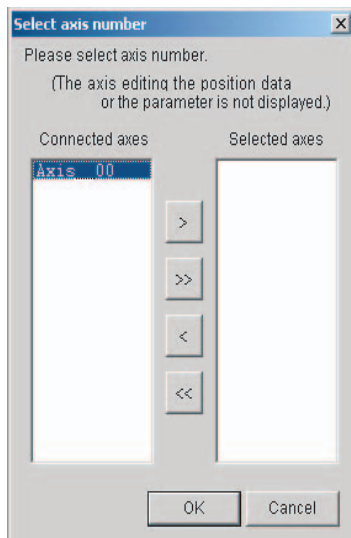
1. Using the PC Software

① **Action** Run the software
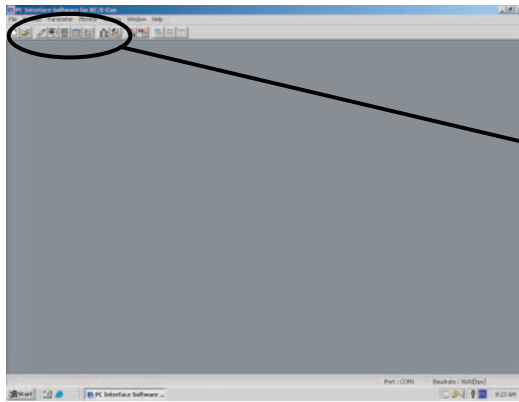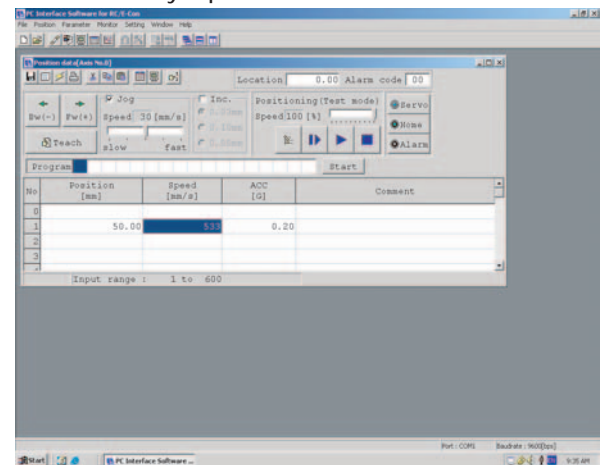

② **Action** Click "Edit Position Data" button

"Edit Position Data" button

③ **Action** Click > , then OK buttons

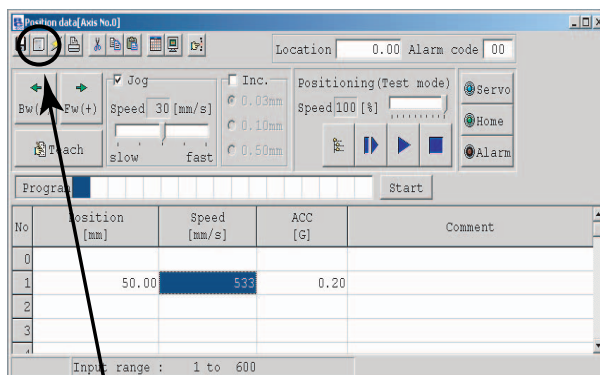④ **Action1** Move the cursor to Position No. 1

Action2 Input 50.00 and hit the "Enter" key

Other data, such as speed and acceleration are automatically input with their default values.

⑤ **Action** Click "Send to Controller" button
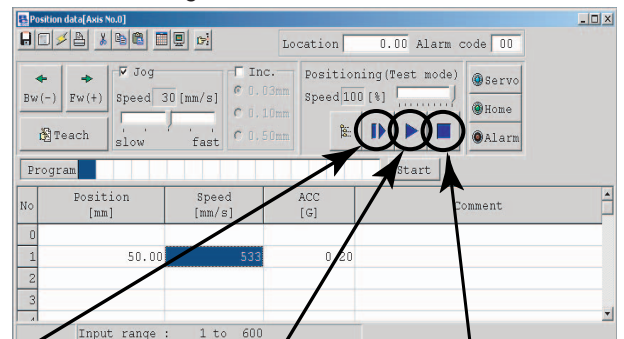
All data in the Position Table is sent to the controller.

"Send to Controller" button

⑥ **Action** Click "Move" button

The actuator will move 50mm to Position No. 1. Use the "Stop" button to stop movement. During power start-up, the actuator will return to its Home before moving 50mm to Position No. 1.

"Move" button   "Continuous Move" button   "Stop" button

2. Using the Teaching Pendant (Standard RCA-T model)

① **Action** Select "Edit/Teach" & hit enter

```
Select Mode     Axis1
*Edit/Teach (Position)
*Monitor
*Error List
*User Parameter
*User Adjustment



Select Mode--> Return
(You may select with
    the minus key)
```

② **Action** Move the cursor to Position No. 1 & press the ▼ key

```
Edit/Teach         Axis1
No  Position  Vel    ACC
        mm    mm/s    G
 0         *      *      *
 1         *      *      *
 2         *      *      *
 3         *      *      *
 4         *      *      *
 5         *      *      *
 6         *      *      *
 7         *      *      *
Add/Del: No  -->Return
Teach/Play:
   Position --> Return
[Srv ON  Pos     0.00]
```

③ **Action** Input "50.00" for Position No. 1 & hit enter

Other data, such as speed & acceleration are automatically inputted with their default values.

```
Edit/Teach        Axis1
No  Position  Vel   ACC
        mm    mm/s   G
 0         *      *      *
 1     50.00   300  0.20
 2         *      *      *
 3         *      *      *
 4         *      *      *
 5         *      *      *
 6         *      *      *
 7         *      *      *
Add/Del: No  -->Return
Teach/Play:
   Position --> Return
[Srv ON  Pos     0.00]
```

④ **Action** Press the ◀ key & hit enter

```
Edit/Teach        Axis1
No  Position  Vel   ACC
        mm    mm/s   G
 0         *      *      *
 1     50.00   300  0.20
 2         *      *      *
 3         *      *      *
 4         *      *      *
 5         *      *      *
 6         *      *      *
 7         *      *      *
Add/Del: No  -->Return
Teach/Play:
   Position --> Return
[Srv ON  Pos     0.00]
```

⑤ **Action** Press the ⊟ key, select "* Move", & hit enter

```
Edit/Teach        Axis1
No  Position  Vel   ACC
        mm    mm/s   G
 0         *      *      *
 1     50.00   300  0.20
 2         *      *      *
 3         *      *      *
 4         *      *      *
 5         *      *      *
 6         *      *      *
 7         *      *      *
*Direct Teach: SrvOFF
*Job *Increment *Home
*Move *Continuous
[Srv ON  Pos     0.00]
```

⑥ **Action** Select "Vel" with the ⊟ key & hit enter

The actuator will move 50mm to Position 1. Use the ESC key to pause movement.

```
Edit/Teach        Axis1
No  Position  Vel   ACC
        mm    mm/s   G
 0         *      *      *
 1     50.00   300  0.20
 2         *      *      *
 3         *      *      *
 4         *      *      *
 5         *      *      *
 6         *      *      *
 7         *      *      *
Move (1 Position)
 Vel 10% 50% 100%
 Return --> Move
[Srv ON  Pos     0.00]
```

Parameter Change Procedure for Standalone Testing

Purpose
To show the procedure for connecting and testing an ERC unit without using an I/O (no connection to a PLC). This procedure will disable the HOLD input and allow the actuator to be run on a benchtop for testing purposes.

Where Used
When getting a '20D' error when running the system without an I/O connection to a PLC or similar device. Instructions apply to ERC products.

1. Connect the PC cable from the serial port on the PC to the PORT IN at the end of the actuator (looks like a mouse input port).
2. Supply power to the actuator and turn ON.
3. Start the IAI RoboCylinder Software and connect to the actuator (auto).
4. Back up the parameters to a local file on the PC by choosing PARAMETERS → Edit → Select Axis. Click the DISK button to save a copy locally.
5. Go to PARAMETERS → Edit → Select Axis.
   Change Parameter #15 PIO INPUT state from '0' to '1'.
6. Click the SEND TO CTL button or select it from the FILE pull-down menu.
7. Click OK and cycle the power to the actuator.
8. Reconnect the software to the actuator and the system should be ready to move under local PC control from the POSITION menu.

For additional questions please contact IAI Technical Support or see www.intelligentactuator.com for more info.
US Headquarters and Western Region (CA): 1-800-736-1712
Midwest Region (IL): 1-800-944-0333
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