

Compact
Low cost
CE

Motion Controller with Two-axis Interpolation Control **RC-234**

GENERATE MASTER



Description

RC-234 is a motion controller which can control stepping motor and servo motor by pulse input. This can control 2 motors simultaneously, and circular and linear interpolation controls are available in the XY plane.

Features

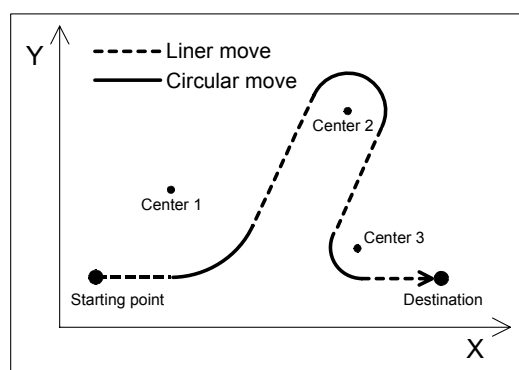
- Compliant with CE Marking.
- S-curve acceleration provides smooth moves without shock or damping.
- Closed loop control when used with an encoder for accurate positioning.
- Stand-alone operation and control from PLC are available by downloading the user program.
- Pulse output frequency up to 1Mpps permits to be used with a high resolution microstep driver.
- Up to 20 controllers such as RC-208A and RC-234 can be daisy-chained together in a Masternet system from one PC and multi-axis stand-alone control is available at a low price.

Specifications

Supply voltage	18 to 40VDC (including ripple)
Supply current	Less than 100mA (at 24 VDC)
Pulse rate	0.1pps to 1Mpps
Positioning range	0 to 16,777,215 pulses or -8,388,608 to +8,388,607
Number of positioning data	1,000 (each axis)
Accel./Decel method	S-curve, Trapezoidal
Interpolation function	2-axis circular interpolation 2-axis linear interpolation
Input ports	10 (8 in a servo mode)
Output ports	10 (8 in a servo mode)
Stall detection method	Encoder or STALL sensor
Communication method	Current loop transmission (use Link Master RC-002C)
Communication Speed	38400, 19200, 9600, 2400, 1200, 300 bps
User program	8,000 bytes (approx. 1,500 commands)
Recommended drivers	Pulse input drivers (RD-0 series)
Number of control axes	2 axes (Synchronized motion of the 2 axes is available.)
Outside dimensions	27.5(H) × 105(W) × 56(D)mm
Weight	approx. 250g

Two-axis Interpolation Control

Circular and linear interpolation controls are available in the XY plane. Can configure more complex paths by combining circular and linear interpolation.



Speed change during a interpolation control.

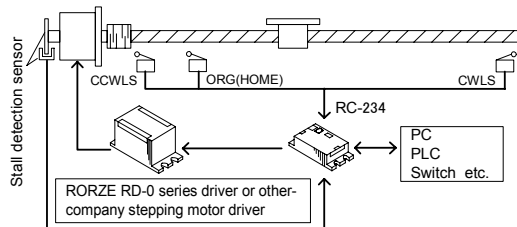


Mode Selections

You can set up the following modes arbitrarily to each axis.

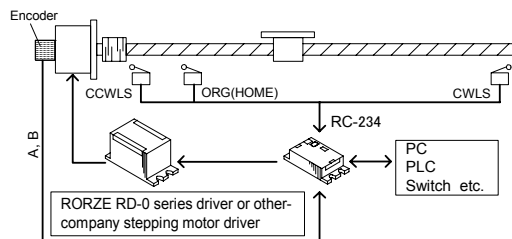
1. Controlling stepping motor

Stall detection of stepping motors is available by connecting stall detection sensor. Also, you can override a stall detection and control a stepping motor as usual.



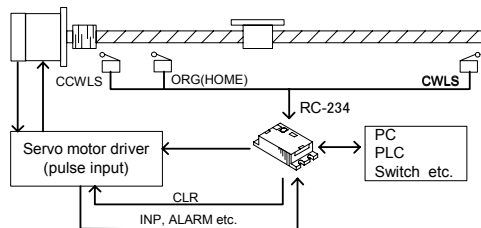
2. Controlling stepping motor with an encoder input

Mode to control a stepping motor on the basis of the pulse put out from an incremental type encoder. This mode is effective when accurate positioning is required.



3. Controlling servo motor (Pulse input type driver)

Mode to control a servo motor by connecting with a pulse input servo motor driver.



Sample of User Program

```
/22000/JOF3-1/4//END
```

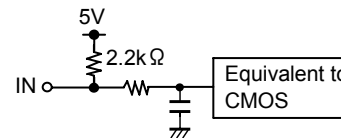
("/" is a separator between commands)

Action: This program sets a position pulse number and when the input port D3 is turned ON, moves a motor by 2,000 pulses in the CW direction (Command 4) and the user program is terminated.

You can also use in the following stand alone mode: Once the user program is transferred to EEPROM and autostart is enabled, the controller will start the program automatically upon turning ON the power.

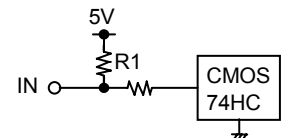
Input/Output Ports

Input port



Low Level : Less than 0.8V
High Level: More than 2.0V

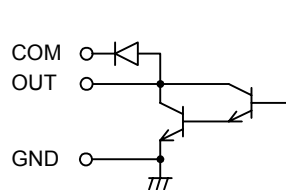
Input for motor control



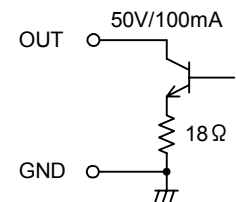
Low Level : Less than 1.5V
High Level: More than 3.5V

R1	470Ω (EA, EB) 2.2KΩ (Others)
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Output port



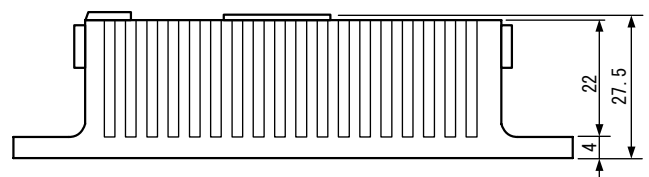
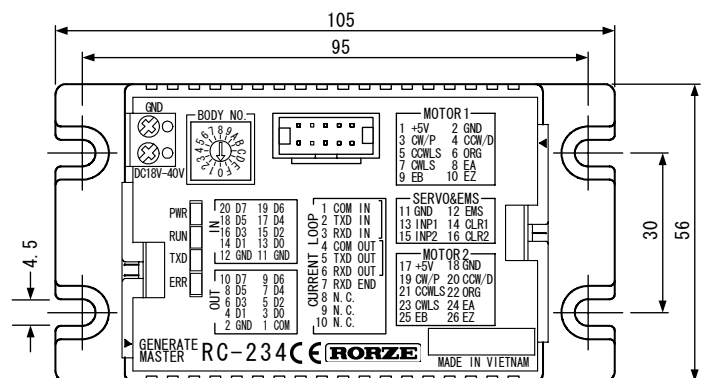
Output for motor control



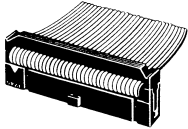


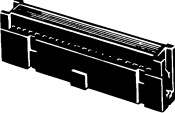


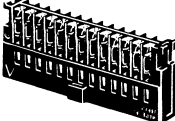

Open Collector (Darlington Transistor)
Voltage: Less than 50V
Current: Less than 200mA (per one contact)
Less than 800mA in total of 8 contacts
Vce(sat): Less than 1.1V (Ic : 200mA)


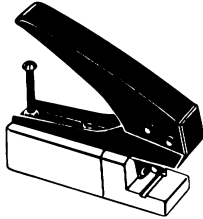
Dimensions

(mm)

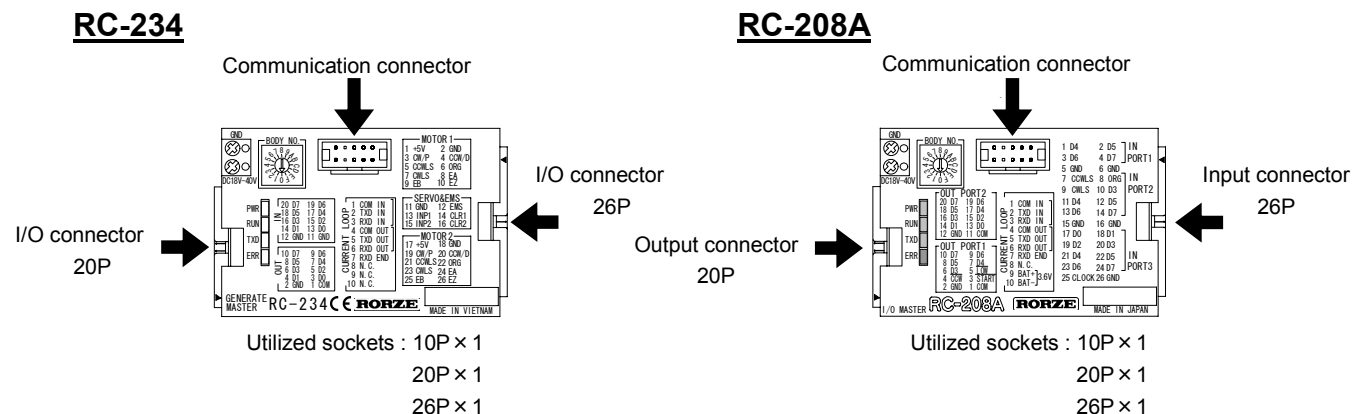


Option Connectors for Wiring

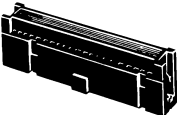

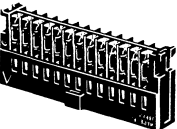
I/O Cable	Connectors	
Socket with flat cable Model : RCC- <u>○○□□□□</u> L Number of pins : 10, 20, 26 Length (cm) : 50, 100, 200, 300  Flat cable with a single-sided socket × 1  Lock lever × 1	Socket for flat cable Model : RCF- <u>○○P</u> Number of pins : 10, 20, 26  Strain relief × 1  Socket × 1  Lock lever × 1	Socket for discrete wires (for AWG#24) Model : RCR- <u>○○P</u> Number of pins : 10, 20, 26  Semi cover × 2  Socket × 1  Lock lever × 1

Tools	
Hand Crimper for flat-cable connectors Model : TOOL-901500 Necessary when connecting sockets with flat-cable. 	Hand Crimper for discrete-wire connectors Model : TOOL-XY2B-7006 Necessary when connecting sockets with discrete-wires. 

Sockets used for each controller



Suitable connectors (Manufactured by OMRON)

For Flat cable			
Sockets		Strain reliefs	
XG4M-2630 (for 26P)		XG4T-2604 (for 26P)	
-2030 (for 20P)		-2004 (for 20P)	
-1030 (for 10P)		-1004 (for 10P)	
For Discrete wire			
Sockets			
for AWG#28 to 26	for AWG#24		Semicovers
XG5M-2635 (for 26P)	XG5M-2632 (for 26P)		XG5S-1301 (for 26P)
-2035 (for 20P)	-2032 (for 20P)		-1001 (for 20P)
-1035 (for 10P)	-1032 (for 10P)		-0501 (for 10P)
Lock lever (Stopper to prevent from coming off a socket.)			
XG4Z-0002	