

Compact
Low cost

Controllers to Control Stepping Motors and I/O Ports

RC-208A

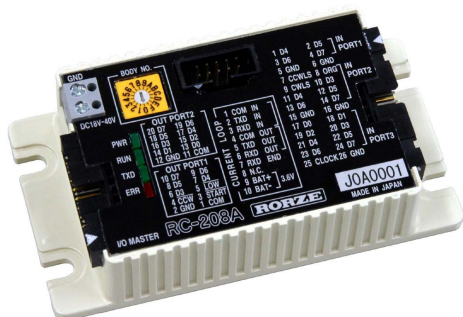
I/O MASTER

Description

I/O Master RC-208A utilizes serial communication (RS-232C) to control step motor drivers and I/O ports. Also, because a pulse counter is built in, trapezoidal acceleration is available by combining with RORZE's drivers with built-in pulse oscillator.

Features

- In case of controlling no motor, all I/O ports can be used as general I/O ports.
- Stall detection by attaching a stall sensor and a stall slit to a device. (Note: Stall sensor devices may not be rotary in shape.)
- 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. (See the example 2 in the system configuration.)
- Stand-alone operation and control from PLC are available by downloading the user program stored in built-in EEPROM.

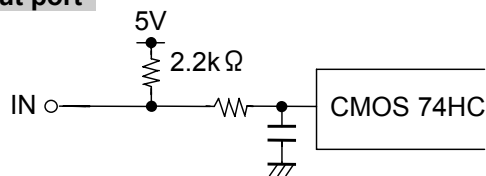


Specifications

Supply voltage	18 to 40VDC (including ripple)
Supply current	Less than 30mA (at 24VDC)
Clock response	100kpps max. 80kpps (at stall detection)
Positioning range	0 to 16,777,215 pulses or -8,388,608 to +8,388,607
Number of positioning data	1,130
Accel./Decel. method	Trapezoidal
Input ports Output ports	20 (Including I/O ports to 16 control motors)
Stall detection method	STALL sensor
Communication method	Current loop transmission (use Link Master RC-002C)
Communication speed	38400, 19200, 9600 2400, 1200, 300 bps
User program	1,792 bytes (approx. 300 commands)
Recommended drivers	Drivers with built-in pulse oscillator (RD-1, RD-3 series)
Number of control axes	2 axes, controlled alternately
Outside dimensions	27.5(H) × 105(W) × 56(D)mm
Weight	approx. 250g

Input/Output Ports

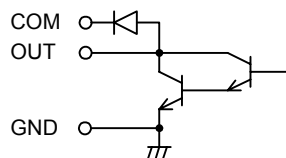
Input port



Low Level : Less than 1.5V

High Level: More than 3.5V

Output port



Open Collector (Darlington Transistor)

Voltage: Less than 50V

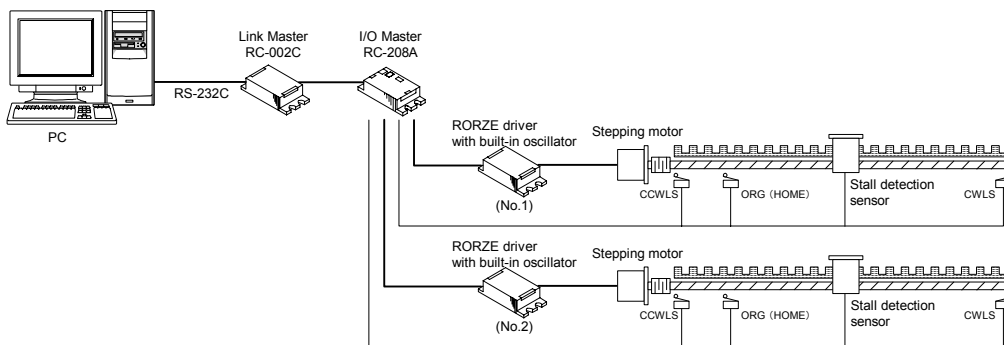
Current: Less than 200mA (per one contact)

Less than 800mA in total of 8 contacts

Vce(sat): Less than 1.1V (Ic : 200mA)

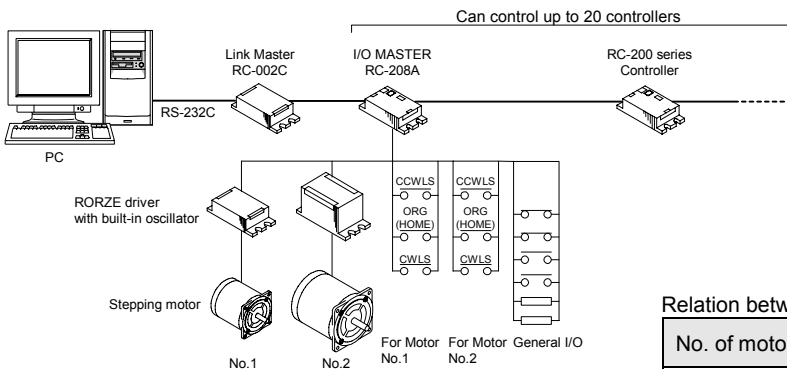
System configurations

Example 1



- When using two motors, RC-208A can control them alternately.
- Stall detection of stepping motors is available by connecting stall detection sensor to RC-208A.
- When using RD-1 series driver, a low step pulse (pulses in deceleration period) needs to be set up in advance. RD-3 series driver has "GROW OUT" terminal that outputs a signal during acceleration. RD-208A counts the number of pulses while receiving this signal, and automatically calculates a low step pulse to perform deceleration.

Example 2



Relation between No. of motor and general I/O ports.

No. of motor to control	0	1	2
General input ports	20	16	13
General output ports	16	13	10

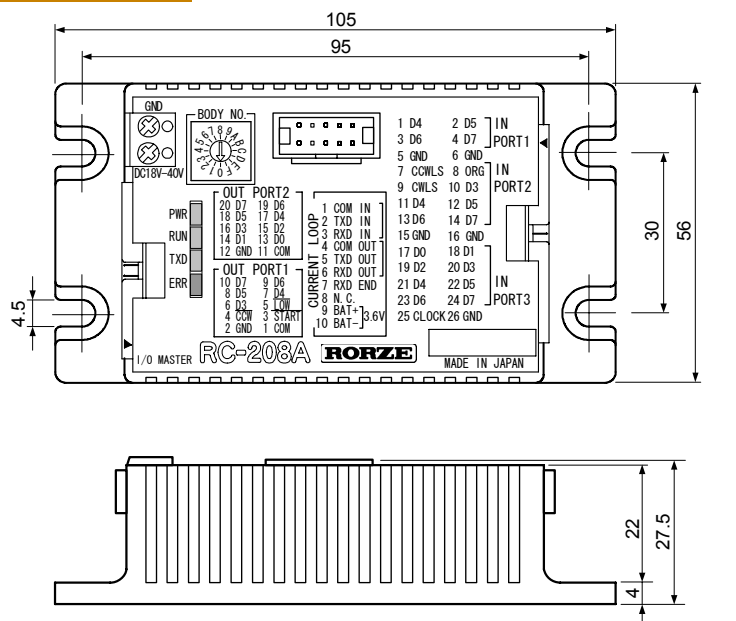
Sample of User Program

/202000030/JOF33-1/4//END
 ("/" is a separator between commands)

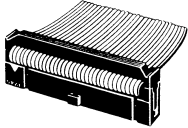


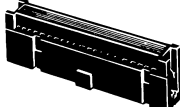

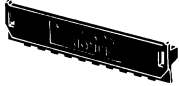
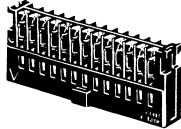

Action: This program sets a position pulse number and a low step pulse number and when D3 of Input port 3 is turned ON, moves a motor by 2,000 pulses in the CW direction (Command 4) and the user program is terminated.


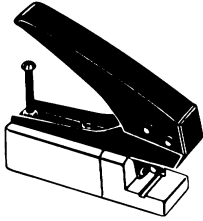
You can also use in the following stand alone mode: Once the user program is transferred to EEPROM and autostart is enabled, the controller will start the program automatically upon turning ON the power.

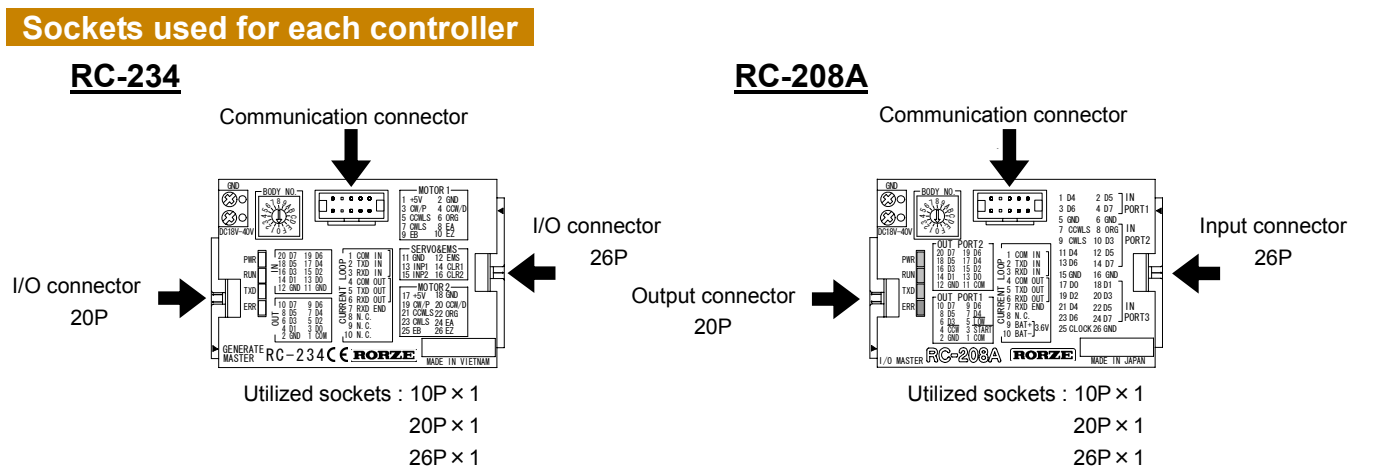
Dimensions

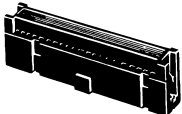

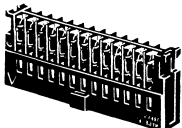



Option Connectors for Wiring

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

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



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