Field network system with minimal wiring

NETWORK

Each field path setting file ca be downloaded from the website.
https://global.yamaha-motor.com/business/robot/download/fieldbus/

RCX320 P.548 RCX221/RCX222 P.558 RCX340 P.566

CC-Link Basic specifications for network modules

Item	Network modules CC-Link
Applicable controllers	RCX320 / RCX221 / RCX222 / RCX340
Version supporting CC-Link	Ver. 1.10
Remote station type	Remote device node
Number of occupied stations	Fixed to 4 stations
Station number setting	1 to 61 RCX320/RCX221/RCX222 (Set from the rotary switch on the board) RCX340 (Set from the programming box or support software)
Communication speed setting	10Mbps, 5Mbps, 2.5Mbps, 625Kbps, 156Kbps (set from the Rotary swich on board)
No. of CC-Link I/O Note1	General input 96 points, General output 96 points, Dedicated input 16 points, Dedicated output16 points
Parallel external I/O Note2	A function that simulates serial communication enables individual control of the various points from a master sequencer, regardless of the robot program.
Shortest distance between nodes Note3	0.2 m or more
Overall length Note3	100m/10Mbps, 150m/5Mbps, 200m/2.5Mbps, 600m/625Kbps, 1200m/156Kbps
Monitor LED	RUN, ERR, SD, RD

Note 1. In case of RCX320/RCX221/RCX222, the controller I/Os are updated every 10ms.
For RCX 340, the controller I/Os are updated every 5ms for the shortest. The actual update time changes depending on the communication cycle of the master unit.
Note 2. With RCX 141/142, the exclusive input of the parallel I/O cannot be used other than the interlock input.With RCX221 / 222, the exclusive input of the parallel I/O cannot be used. (The interlock input terminal is located on the SAFETY connector side.)
Note 3. These values apply when a cable that supports CC-Link Ver.1.10 is used.

DeviceNet Basic specifications for network modules

Item		Network modules DeviceNet™
Applicable controllers		RCX320 / RCX221 / RCX222 / RCX340
Applicable DeviceNet™ specifications		Volume 1 Release2.0 / Volume 2 Release2.0
Device Profile Name		Generic Device (device number 0)
Number of occupied CH Note1		Normal: Input/output 24ch each, Compact: Input/output 2ch each
MAC ID setting		0 to 63
Transmission speed setting		500Kbps, 250Kbps, 125Kbps (set using DIP switch on board)
DeviceNet™ I/O Note2	Normal	General input 96 points, General output 96 points, Dedicated input 16 points, Dedicated output 16 points
	Compact	General input 16 points, General output 16 points, Dedicated input 16 points, Dedicated output 16 points
Parallel external I/O Note3		The master module and up to four ports can be controlled regardless of the robot program by using the pseudoserialization function.
Network length	Overall length Note4	100m/500Kbps, 250m/250Kbps, 500m/125Kbps
	Branch length / Overall branch length	6m max./39m max., 6m max./78m max., 6m max./156m max.
Monitor LED		MS (Module Status), NS (Network Status)

Note 1. Use the robot parameter to select Normal or Compact. However, with the controllers earlier than Ver.9.08 of RCX221 / 222, this selection is not available and the setting remains the same as Normal.
Note 2. In case of RCX320/RCX221/RCX222, the controller I/Os are updated every 10ms.
For RCX 340, the controller I/Os are updated every 5ms for the shortest. The actual update time changes depending on the communication cycle of the master unit.
Note 3. With RCX221 / 222, the exclusive input of the parallel I/O cannot be used. (The interlock input terminal is located on the SAFETY connector side.)
Note 4. These values apply when a thick cable is used. The distance is less when a fine cable is used or when thick and fine cables are mixed in use.

PROFIBUS Basic specifications for network modules

Item	Network modules PROFIBUS
Applicable controllers	RCX320 / RCX221 / RCX222 / RCX340
Communication profile	PROFIBUS-DP slave
Number of occupied nodes	1 node
Setting of station address	1 to 99 (set using Rotary switch on board)
Setting of communication speed	9.6Kbps, 19.2Kbps, 93.75Kbps, 187.5Kbps, 500Kbps, 1.5Mbps, 3Mbps, 6Mbps, 12Mbps (automatic recognition)
PROFIBUS I/O Note1	General input 96 points, General output 96 points, Dedicated intput 16 points, Dedicated output 16 points
Parallel external I/O Note2	The master module and up to four ports can be controlled regardless of the robot program by using the pseudoserialization function.
Overall length	100m/3M·6M·12Mbps, 200m/1.5Mbps, 400m/500Kbps, 1000m/187.5Kbps, 1200m/9.6K·19.2K·93.75Kbps
Monitor LED	RUN, ERR, SD, RD, DATA-EX

Note 1. In case of RCX320/RCX221/RCX222, the shortest I/O update interval of the controller is 10ms but the actual I/O update time varies depending on the update time with the master station.
For RCX 340, the controller I/Os are updated every 5ms for the shortest. The actual update time changes depending on the communication cycle of the master unit.
Note 2. With RCX221 / 222, the exclusive input of the parallel I/O cannot be used. (The interlock input terminal is located on the SAFETY connector side.)

Ethernet Basic specifications for network modules

Item	Network modules Ethernet
Applicable controllers	RCX320 / RCX340
Network specification	As specified for Ethernet (IEEE802.3)
Connector specification	RJ-45 connector (8-pole modular connector) 1 port
Baud rate	10Mbps (10BASE-T)
Communication mode	Half Duplex (Half-duplex)
Network protocol	Application layer: TELNET / Transport layer: TCP / IP Network layer: IP, ICMP, ARP / Data link layer: CSMA/CD / Physical layer: 10BASE-T
Number of simultaneous log inputs	1
Setting of IP address, etc.	Set from RPB
Monitor LED	Run, Collision, Link, Transmit, Receive