

COMMUNICATIONS MODULES

SYSMAC NET LINK MODULE

SYSMAC NET is a fiber-optic token ring network designed to transfer large amounts of data between the PLC and IBM PC/AT Compatible, VME computers, and any ASCII RS-232C devices. Fiber-optic transmission media provides reliable long distance communications in harsh environments. Automatic loop-back, extensive diagnostics, and network utility software provide added reliability and ease of configuration. The C200HS-SNT32 SYSMAC Module is easily integrated to the C200H α CPU. The Module connects to the CPU through one of the C200HW-COM01/COM04-E Communications Boards with a C200HW-CE001/CE002 Bus Connector.

Features

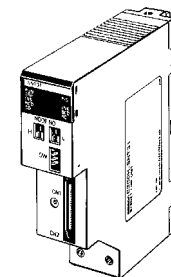
- Achieves high-speed and long-distance communications through Fiber-optic Cables – N:N token ring communications method is available. Transmission is possible with a node separation of 1 km and a data transmission rate of 2M bits/s. Transmission up to 3 km is possible when a long-distance repeater is connected.
- Large-scale FA Network configuration – Up to 126 NSB, NSU, and SYSMAC NET Link Modules can be connected. Connect the PLC to a factory computer or host computer network.
- Improved redundancy capabilities – The automatic loop-back and node separation test facilitate the taking of prompt countermeasures when any abnormality occurs.
- Easy data links between PLCs – The built-in application software allows easy data links between PLCs.
- Compatible with H-PCF Fiber-optic Cables – Possible to use not only the conventional PCF fiber optic cables but also H-PCF (hard-clad fiber) Cables. Since solderless optical connectors can be used, connections on-site have become easier. (For detailed specifications and ordering procedures for H-PCF Cables, contact your OMRON representative.)

Optional Power Supply Module

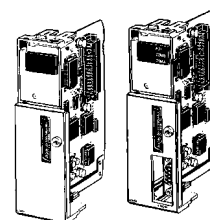
The SYSMAC Net Module is designed to receive back-up power supply from the Optional Power Supply Module. Should any failure of the SYSMAC Net Module occur, the node bypass function will activate to prevent shutdown of the entire network.

Communication Specifications

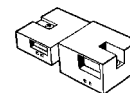
ITEM	DESCRIPTION
Communications method	N:N token ring
Transmission method	Manchester code, base band
Data transmission rate	2M bps
Transmission paths	2-conductor fiber optic cable (plastic-clad, crystal core; core dia.: 200 μ m)
Number of nodes	126 max.
Node separation	1 km max.
Message length	2K bytes max.
Send buffer capacity	1 message
Receive buffer capacity	15 messages
Redundancy functions	Automatic loopback Node bypass Self-diagnosis function (by test mode function) Error detection CRC-CCIT generating function = $X^{16}+X^{12}+X^5+1$



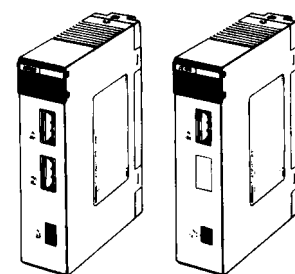
C200HS-SNT32



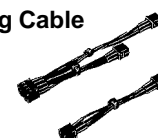
Communications Board
C200HW-COM01
C200HW-COM04-E
(w/RS-232C port)



Bus Connection Unit
C200HW-CE001
(for 1 Module)
C200HW-CE002
(for 2 Modules)



Optional Power Supply Module
C200H-APS01 (for 1 Module)
C200H-APS02 (for 2 Modules)
(Optional Power Supply Adapter required)



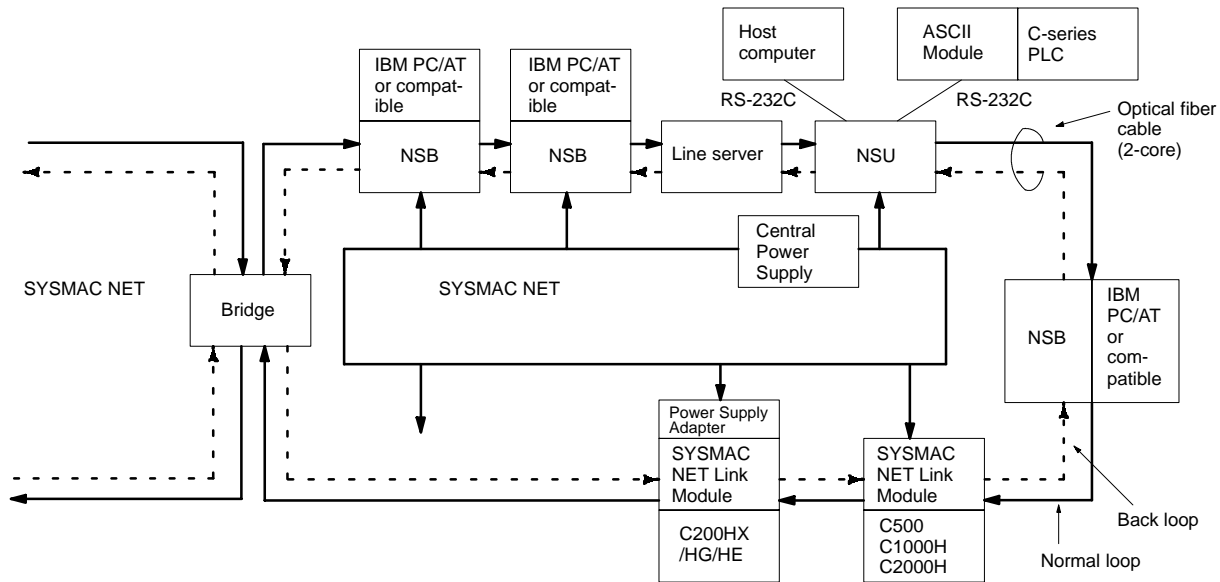
Power Supply Connecting Cable
C200H-CN001
(for 1 Module)
C200H-CN002
(for 2 Modules)

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SYSMAC NET LINK MODULE

Network Configuration

The SYSMAC NET consists of one line server and a combination of 126 NSB, NSU, and SYSMAC NET Link Modules max.



NSB: Network Service Board

NSU: Network Service Module

Bridge: Used for connecting two networks. Up to 20 bridges can be connected in one network provided that it is treated as one node.

SYSMAC NET Link Module: Treated as one node. (It doesn't function as a bridge. When used together with the SYSMAC LINK Module, only a total of two Modules can be connected.)

Specifications

PART NUMBER	C200HS-SNT32
Transmission direction	1:1 Data send/receive 1:N Data send only (no response) Broadcasting data transfer: N:126 max.
Data length	1,000 words max. (2,000 bytes) Only in the same area
Send/Receive data to/from PLC	The command/response format data for data send or that for data receive are sent/received if SEND(90) or RECV(98) has been executed by the program instruction.
Send/Receive data to/from Module other than PLC	Command/Response by data send or data receive
Watchdog timer response	1 s (default) or watchdog timer setting value (10 min, 55.35 s max.)
Internal current consumption	1 A max.
Weight	400 g max.
Manual	W114

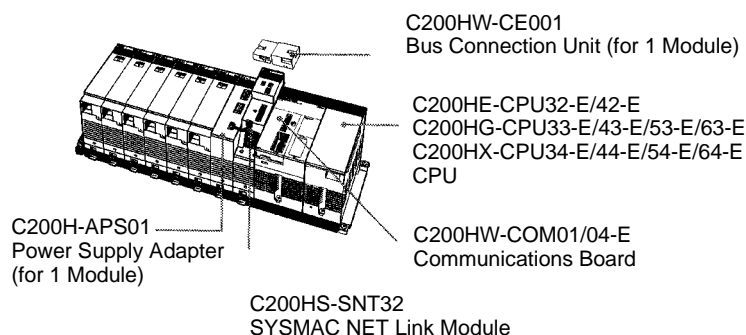
COMMUNICATIONS MODULES

SYSMAC NET LINK MODULE

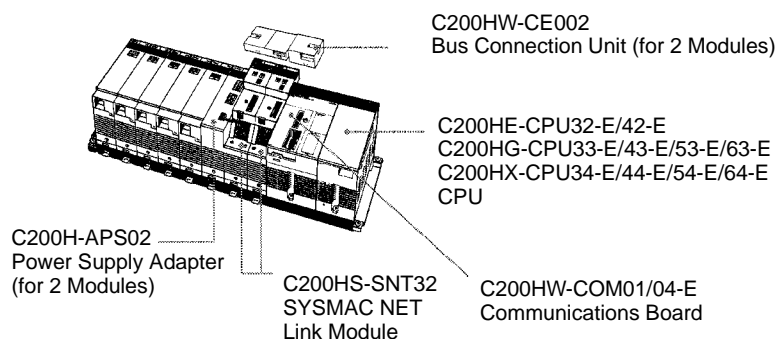
Possible Configurations When Installing SYSMAC NET Link Modules

The following are the possible configurations for installing a SYSMAC NET Module on a C200H α CPU Rack.

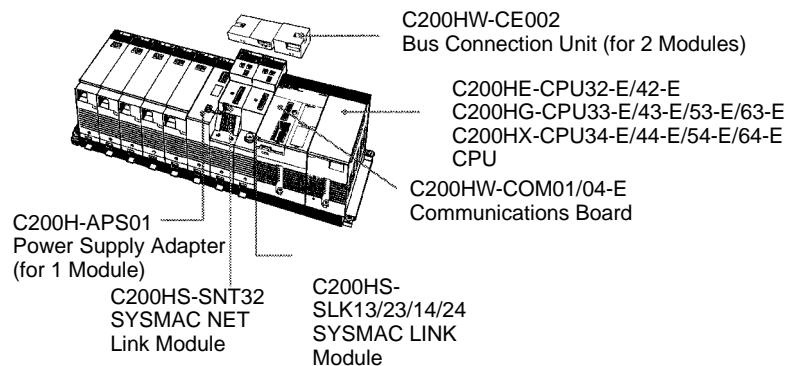
One Module Mounted



Two Modules Mounted



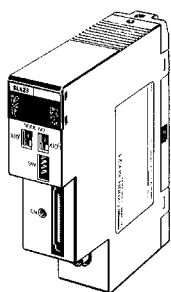
With SYSMAC LINK Module



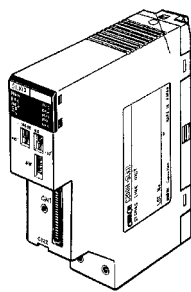
Note: Up to two SYSMAC LINK Modules and the SYSMAC NET Link Module can be mounted to the left of the CPU.

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SYSMAC LINK MODULES

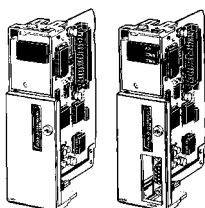


C200HW-SLK23/24
(Coaxial cable)

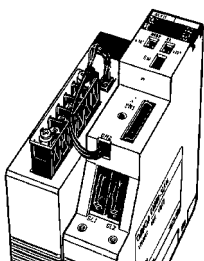
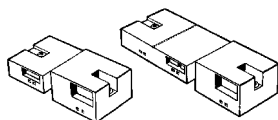


C200HW-SLK13/14
(Fiber-optic)

Communications Board
C200HW-COM01
C200HW-COM04-E
(w/RS-232C port)



Bus Connection Unit
C200HW-CE001
(for 1 Module)
C200HW-CE002
(for 2 Modules)



C200H-APS03
Optional Power Supply Module

SYSMAC LINK is a fiber-optic token ring network designed to transfer large amounts of control data in real-time between PLCs. Both coaxial and fiber-optic medias may be used.

The C200H α SYSMAC Link Modules are easily integrated to the C200H α CPU. The Modules connect to the CPU through one of the C200HW-COM01/COM04-E Communications Boards with a C200HW-CE001/CE002 Bus Connector.

Features

- Maximum of 62 SYSMAC LINK Modules – Up to 62 SYSMAC LINK Modules can be connected in one network. In addition, two SYSMAC LINK Modules can be mounted on one PLC, allowing multi-level system configuration.
- Data Modules – The data link capacity is as large as 2,966 words. High-speed and large-capacity data communications are possible using the LR area and DM area.
- Flexible Data Link configuration – Since an optimum data link table can be created for each node (Machine No.) using the SYSMAC Support or SYSWIN, the data link area can be used effectively.
- Event communications – using the SEND and RECV instructions, up to 256 words of data can be sent or received for any node in the network.
- Remote programming or monitoring using the SYSMAC Support Software – Programs can be transferred to any SYSMAC Module within the network and various monitoring operations can be performed for that Module.
- Built-in LSI exclusively for communications – The built-in LSI allows setting of the communication time period between SYSMAC Modules. The control station is automatically switched when any trouble occurs in the data link control station, assuring a highly reliable data link system.

Optional Power Supply Module

The SYSMAC Link Modules are designed to receive back-up power supply from the Optional Power Supply Module. Should any failure of the SYSMAC Link Module occur, the node bypass function will activate to prevent shutdown of the entire network.

Note: Mount the SYSMAC LINK Module to the left of the CPU. The SYSMAC LINK Module cannot be used with the C200HE-CPU11-E.

COMMUNICATIONS MODULES

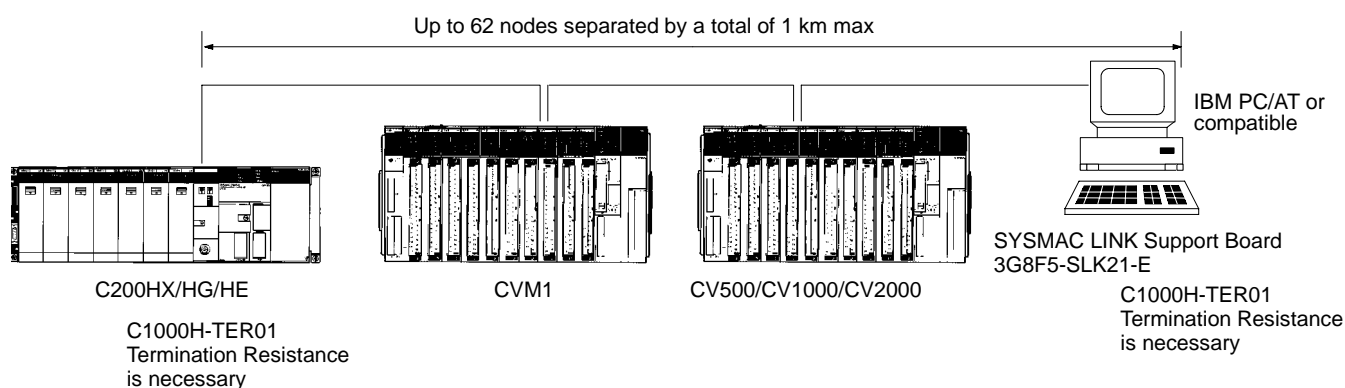
SYSMAC LINK MODULES

Specifications

PART NUMBER	C200HW-SLK23/24 (COAXIAL)	C200HW-SLK13/14 (FIBER OPTIC)
Communications method	N:N token ring	
Transmission method	Manchester code, base band	
Transmission path	Bus	Daisy chain
Data transmission rate	2M bps	
Transmission media	Coaxial cable (5C-2V)	Hard-plastic-clad quartz optical fiber cable
Node separation	1 km max.	10 km max. (800 m max. between nodes)
Message length	512 bytes max. (256 words)	
Connectors	BNC (F Adapter)	Full, half-lock press-in connector
Link functions	Data link, data read/write service	
Data link words	C200HW-SLK13/23: 918 words max. C200HW-SLK14/24: 2,966 words max.	
Send buffer capacity	1 message	
Receive buffer capacity	2 messages	
RAS functions	Automatic polling unit backup, self-diagnostics (internode echo tests), failed node bypass (optical systems only), watchdog timer, error (CRC-CCITT) detection = $X^{16}+X^{12}+X^5+1$	
Current consumption	0.8 A max.	
Weight	400 g max.	500 g max.
Manual	W174	

System Configuration

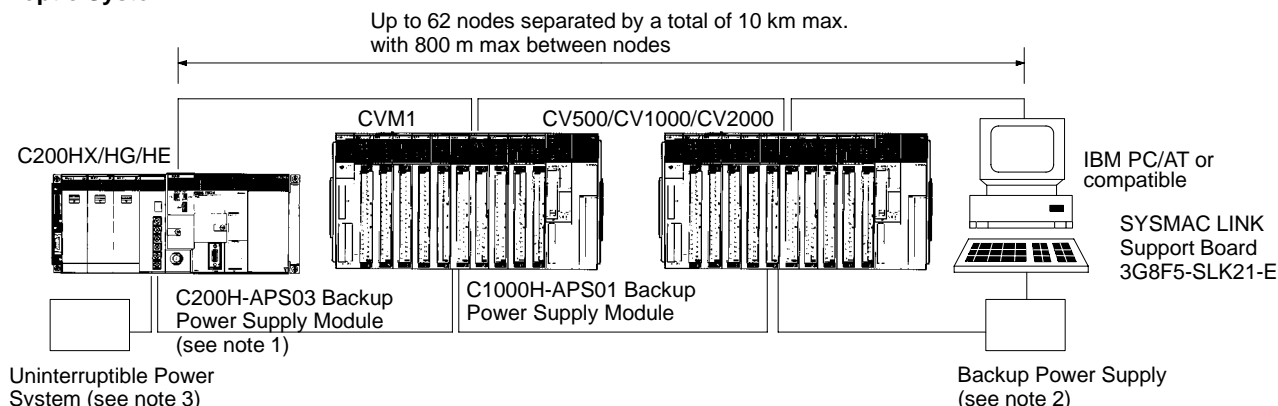
Coaxial Cable System



COMMUNICATIONS MODULES

SYSMAC LINK MODULES

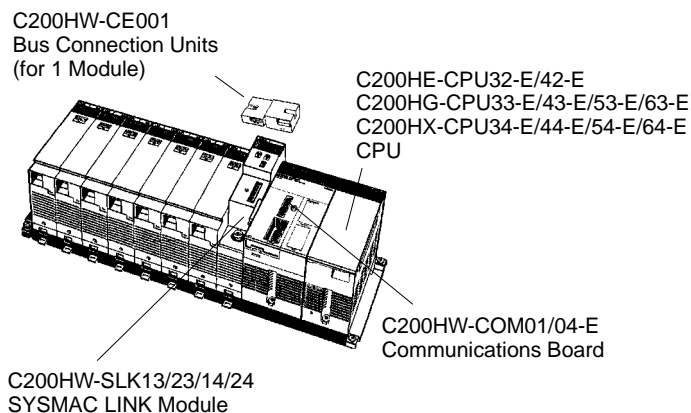
Fiber-optic System



- Note:**
1. The Backup Power Supply is provided with Power Supply Cables (C200H-CN111, C1000H-CN111 for one Module). When supplying power to two Modules simultaneously, order the C200H-CN211 Cable for one Module.
 2. The Backup Power Supply Module for a PLC is different in shape from that for a IBM PC/AT or compatible. Be sure to use an appropriate Power Supply.
 3. The Backup Power Supply must be separated from the main power supply line to the PLC.

Possible Configurations When Installing SYSMAC Link Modules

One Module Mounted



Two Modules Mounted

