

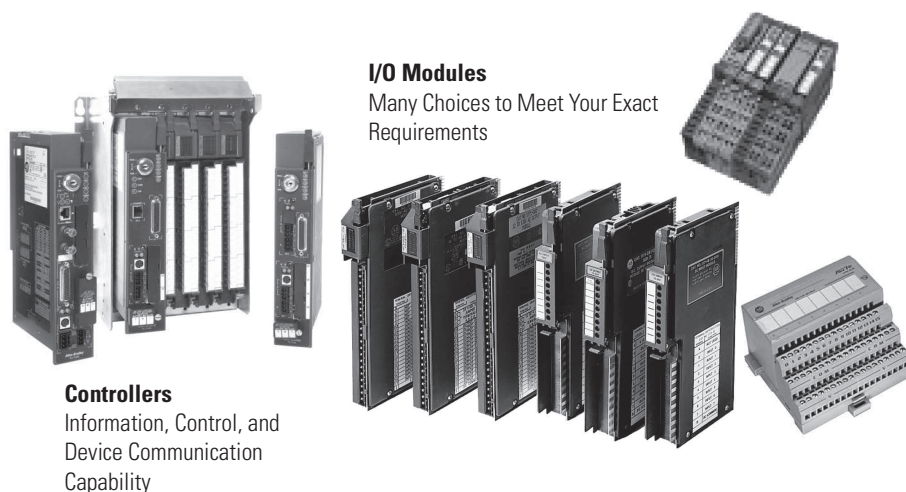
PLC-5 Programmable Controllers Comparison

| Category | Controller | Catalog Number | User Memory Words, Max | Total I/O, Max | Number of Communication Ports (mode) |
|----------------------------------|------------|----------------|------------------------|----------------|---|
| Standard | PLC-5/11 | 1785-L11B | 8000 | 512 | 1 DH+ or Remote I/O (Adapter or Scan) |
| | PLC-5/20 | 1785-L20B | 16,000 | 512 | 1 DH+ and 1 DH+ or Remote I/O (Adapter or Scan) |
| | PLC-5/30 | 1785-L30B | 32,000 | 1024 | 2 DH+ or Remote I/O (Adapter or Scan) |
| | PLC-5/40 | 1785-L40B | 48,000 | 2048 | 4 DH+ or Remote I/O (Adapter or Scan) |
| | PLC-5/40L | 1785-L40L | 48,000 | 2048 | 2 DH+ or Remote I/O (Adapter or Scan) and 1 Extended Local I/O |
| | PLC-5/60 | 1785-L60B | 64,000 | 3072 | 4 DH+ or Remote I/O (Adapter or Scan) |
| | PLC-5/60L | 1785-L60L | 64,000 | 3072 | 2 DH+ or Remote I/O (Adapter or Scan) and 1 Extended Local I/O |
| | PLC-5/80 | 1785-L80B | 100,000 | 3072 | 4 DH+ or Remote I/O (Adapter or Scan) |
| Standard with Protected Memory | PLC-5/26 | 1785-L26B | 16,000 | 512 | 1 DH+ and 1 DH+ or Remote I/O (Adapter or Scan) |
| | PLC-5/46 | 1785-L46B | 48,000 | 2048 | 4 DH+ or Remote I/O (Adapter or Scan) |
| | PLC-5/86 | 1785-L86B | 100,000 | 3072 | 4 DH+ or Remote I/O (Adapter or Scan) |
| ControlNet | PLC-5/20C | 1785-L20C15 | 16,000 | 512 | 1 ControlNet (Dual Media) and 1 DH+ |
| | PLC-5/40C | 1785-L40C15 | 48,000 | 2048 | 1 ControlNet (Dual Media) and 2 DH+ or Remote I/O (Adapter or Scan) |
| | PLC-5/80C | 1785-L80C15 | 100,000 | 3072 | 1 ControlNet (Dual Media) and 2 DH+ or Remote I/O (Adapter or Scan) |
| ControlNet with Protected Memory | PLC-5/46C | 1785-L46C15 | 48,000 | 2048 | 1 ControlNet (Dual Media) and 2 DH+ or Remote I/O (Adapter or Scan) |
| Ethernet | PLC-5/20E | 1785-L20E | 16,000 | 512 | 1 Ethernet, 1 DH+ and 1 DH+ or Remote I/O (Adapter or Scan) |
| | PLC-5/40E | 1785-L40E | 48,000 | 2048 | 1 Ethernet, 2 DH+ or Remote I/O (Adapter or Scan) |
| | PLC-5/80E | 1785-L80E | 100,000 | 3072 | 1 Ethernet, 2 DH+ or Remote I/O (Adapter or Scan) |

Introduction

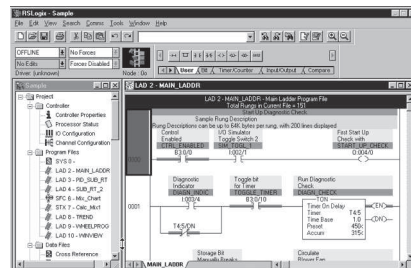
1785 PLC-5 Programmable Controller: The Foundation of Control Architecture

The PLC-5 programmable controller stands at the center of a control architecture that brings together existing and future systems by means of networks such as EtherNet/IP, ControlNet and DeviceNet, and offers connectivity among SLC 500, ControlLogix, and MicroLogix controllers. Because they include embedded network connections, PLC-5 controllers enable your control architecture to be flexible enough to include cost-effective connections to a wide range of devices.



I/O Modules
Many Choices to Meet Your Exact Requirements

Controllers
Information, Control, and Device Communication Capability



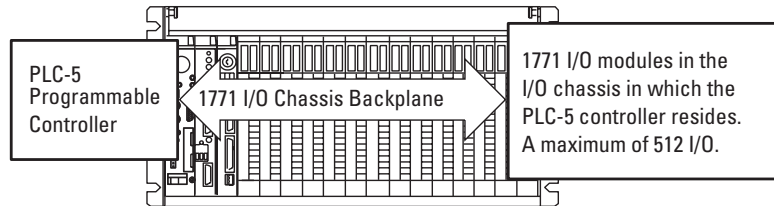
Software Tools
Program in Structured Text, Function Block, Sequential Function Charts or Ladder Logic Languages

| Topic | Page |
|-------------------------------|------|
| PLC-5 System Overview | 2 |
| Lay Out the System | 4 |
| Select I/O Modules | 7 |
| Select Network Communications | 19 |
| Select Controllers | 31 |
| Select Chassis | 37 |
| Select Power Supplies | 39 |
| Select Software | 43 |
| ViewAnyWare Products | 50 |
| Summary | 53 |

PLC-5 System Overview

A PLC-5/1771 control system, at minimum, consists of a programmable controller and I/O modules in a single 1771 chassis with a power supply. You choose the controller with the on-board communication ports you need.

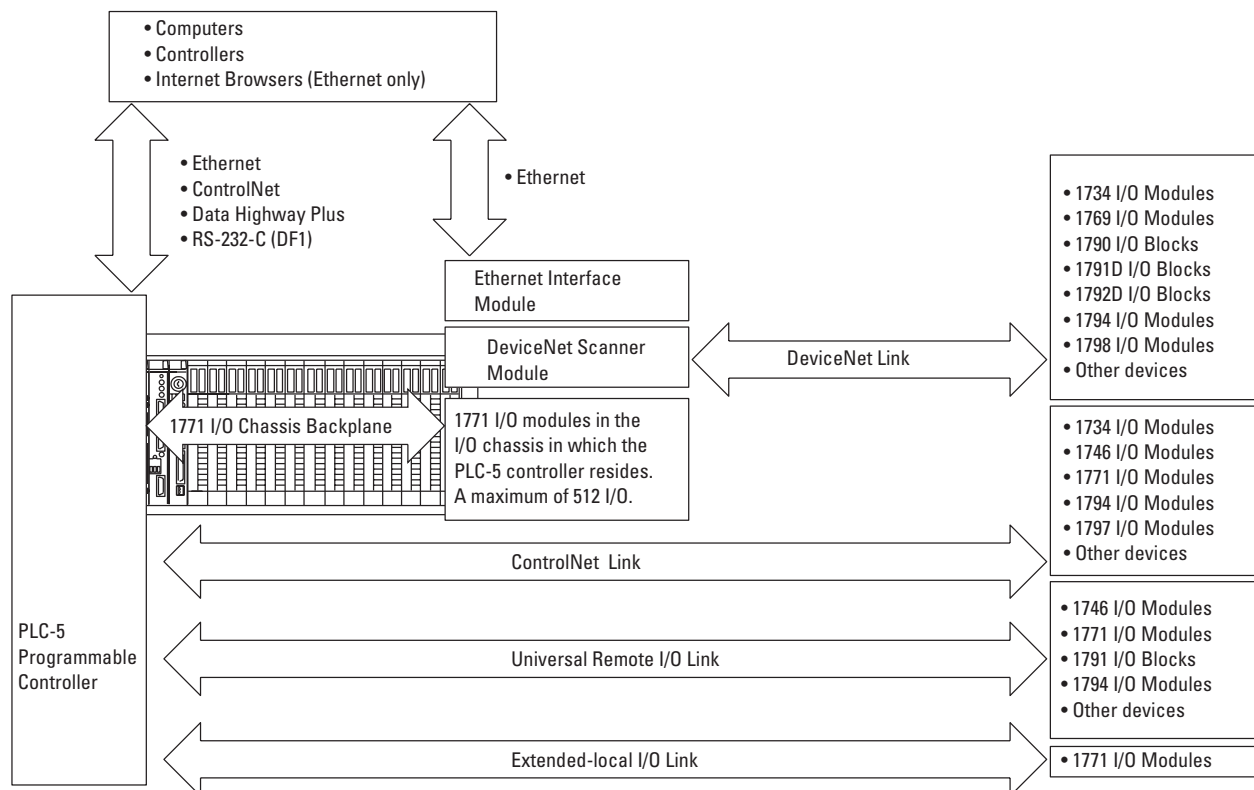
A simple system can consist of only a standalone controller and I/O modules all in a single chassis



On-board remote I/O scanner ports are available on all PLC-5 controllers. On-board extended-local I/O scanner ports are available on some PLC-5 controllers. On-board ControlNet ports are available on some PLC-5 controllers. To provide a DeviceNet I/O scanner port to the system, you must add a 1771-SDN DeviceNet Scanner Module.

In the typical configuration illustration, a ControlNet port on the controller interfaces the processor to the ControlNet link. In each of the two chassis remote from the controller, a 1771-ACN15 I/O Adapter Module provides I/O modules in those chassis with an interface to the ControlNet link. In this configuration, the PLC-5 controller monitors/controls the I/O in its local I/O chassis as well as the I/O in the remote locations.

Multiple controllers can communicate across networks; and I/O in multiple platforms can be distributed in many locations connected over multiple I/O links



Plug a 1771 power supply module into an I/O module slot, or connect a standalone 1771 power supply into the left end of each chassis.

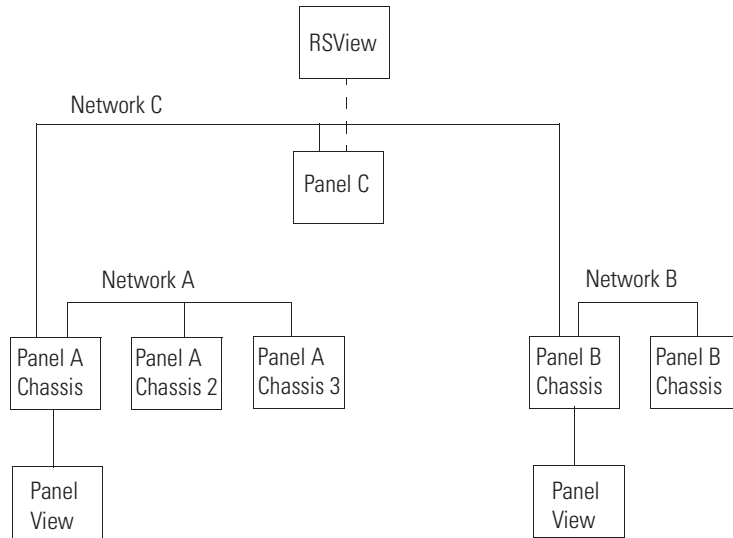
Depending on the communication ports available on your particular PLC control system, you can select operator interfaces that are compatible with those particular ports.

Lay Out the System

Lay out the system by determining the network configuration and the placement of components in each location. Decide at this time whether each location will have its own controller.

Place each controller's I/O on an isolated network to maximize the performance and to more easily accommodate future network or system configuration changes. If you plan to share I/O, make sure the I/O is on a network that each controller can access.

Assume that Network A and Network B both require a controller and its I/O. Both controllers interact with time-critical information.



For a PLC-5 controller to control I/O modules, both the controller and the I/O modules must be directly attached to the same network.

| I/O Location | Controller in Panel A, Chassis 1 | Controller in Panel B, Chassis 1 |
|--------------------|----------------------------------|----------------------------------|
| Panel A, chassis 1 | Yes | Yes |
| Panel A, chassis 2 | Yes | No |
| Panel A, chassis 3 | Yes | No |
| Panel B, chassis 1 | Yes | Yes |
| Panel B, chassis 2 | No | Yes |
| Panel C, chassis 1 | Yes | Yes |

Evaluate what communications need to occur between controllers. If there is sporadic information that is not time-critical, use a message-based network such as an EtherNet/IP (the information portion), Data Highway Plus, or the unscheduled portion of the ControlNet network. If the information is time-critical, such as producer/consumer tags between controllers, use the ControlNet or EtherNet/IP network.

Select a Network

Configure your system for information exchange between a range of devices and computing platforms and operating systems.

| If your application requires | Use this network | Select |
|--|-------------------|---|
| <ul style="list-style-type: none"> • High-speed data transfer between information systems and/or a large quantity of controllers • Internet/intranet connection • Program maintenance | EtherNet/IP | <ul style="list-style-type: none"> • 1785-L20E controller • 1785-L40E controller • 1785-L80E controller • Applicable PLC-5 controller with 1785-ENET interface module |
| <ul style="list-style-type: none"> • High-speed transfer of time-critical data between controllers and I/O devices • Deterministic and repeatable data delivery • Program maintenance • Media redundancy or intrinsic safety options | ControlNet | <ul style="list-style-type: none"> • 1785-L20C15 • 1785-L40C15 • 1785-L80C15 |
| <ul style="list-style-type: none"> • Connections of low-level devices directly to plant floor controllers, without the need to interface them through I/O modules • More diagnostics for improved data collection and fault detection • Less wiring and reduced start-up time than a traditional, hard-wired system | DeviceNet | PLC-5 controller with 1771-SDN scanner module |
| <ul style="list-style-type: none"> • Plant-wide and cell-level data sharing with program maintenance | Data Highway Plus | All PLC-5 controllers have at least one built-in, configurable Data Highway Plus channel |
| <ul style="list-style-type: none"> • Connections between controllers and I/O adapters • Distributed controllers so that each controller has its own I/O and communicates with a supervisory controller | Remote I/O | All PLC-5 controllers have at least one built-in, configurable remote I/O channel |
| <ul style="list-style-type: none"> • Modems • Messages that send and receive ASCII characters to or from devices such as ASCII terminals, bar-code readers, message displays, weigh scales, or printers • Supervisory control and data acquisition (SCADA) | Serial Network | All PLC-5 controllers have one built-in serial port configurable for RS-232, RS-423, or RS-422A |

ControlNet Network

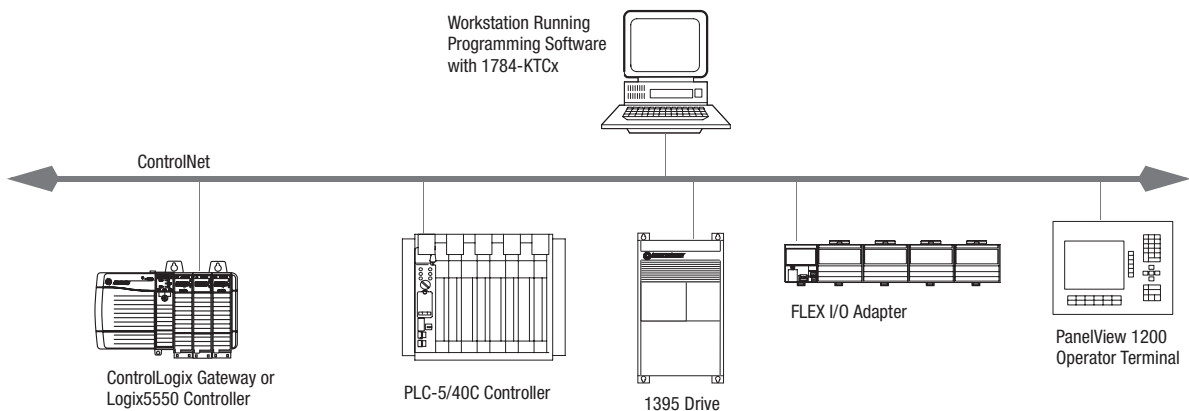


ControlNet PLC-5 controllers offer embedded ControlNet communication capabilities for control and information processing. The ControlNet network provides both I/O control and peer-to-peer communications on a 5 Mbps network, with repeatability and determinism.

You can have multiple ControlNet PLC-5 controllers on one ControlNet network, with each controller handling its own I/O on the network, and at the same time communicating with each other. Multiple controllers can receive input data from one I/O or device node.

ControlNet PLC-5 Programmable Controllers

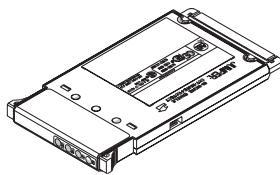
| Cat. No. | User Memory (words), Max | Total I/O Max | Channels | Number of I/O Chassis, Max | | | ControlNet I/O Map Entries | Cable | Power Dissipation, Max | Backplane Current Load |
|--------------------------|--------------------------|---|---|----------------------------|-----------------|--------|----------------------------|---------|------------------------|------------------------|
| | | | | Total | Extended -local | Remote | | | | |
| 1785-L20C15 | 16,000 | 512 any mix or 512 in + 512 out (complement) | 1 ControlNet 1 DH+ 1 DH+/remote I/O | 77 | 0 | 12 | 64 | 1786-CP | 15.8 W | 3.0 A |
| 1785-L40C15 | 48,000 | 2048 any mix or 2048 in + 2048 out (complement) | 1 ControlNet 2 DH+/remote I/O | 125 | 0 | 60 | 96 | 1786-CP | 15.8 W | 3.0 A |
| 1785-L46C15 Protected | 48,000 | 2048 any mix or 2048 in + 2048 out (complement) | 1 ControlNet 2 DH+/remote I/O | 125 | 0 | 60 | 96 | 1786-CP | 15.8 W | 3.0 A |
| 1785-L80C15 | 100,000 | 3072 any mix or 3072 in + 3072 out (complement) | 1 ControlNet 2 DH+/remote I/O | 125 | 0 | 92 | 128 | 1786-CP | 15.8 W | 3.0 A |



ControlNet Communication Adapters

| Cat. No. | Function | Comm. Rate | Design Considerations | Cable | Power Dissipation, Max | Backplane Current Load |
|---------------------|--|------------|--|--------------------------------|------------------------|------------------------|
| 1734-ACNR | Interfaces POINT I/O modules in a POINTBus backplane to ControlNet controllers across a ControlNet network | 5 Mbps | Requires a remote ControlNet PLC-5 controller, Series F, Revision E, or later. | Quad shield RG-6 coaxial cable | 5.0 W | 1.0 A |
| 1747-ACN15, -ACNR15 | Interfaces SLC I/O modules in an SLC chassis to a ControlNet scanner port across a ControlNet network | 5 Mbps | Requires a remote ControlNet PLC-5 controller. | Quad shield RG-6 coaxial cable | 5 W | 900 mA |
| 1771-ACN15, -ACNR15 | Interfaces 1771 I/O modules in a 1771 chassis to a ControlNet scanner port across a ControlNet network | 5 Mbps | Place in remote ControlNet chassis. Requires a ControlNet PLC-5 controller. | Quad shield RG-6 coaxial cable | 5.2 W | 1.0 A |
| 1794-ACN15, -ACNR15 | Interfaces FLEX I/O modules in a FLEX I/O rack to a ControlNet scanner port across a ControlNet network | 5 Mbps | Requires a remote ControlNet PLC-5 controller. | Quad shield RG-6 coaxial cable | 4.6 W | 640 mA |
| 1797- -ACNR15 | Interfaces FLEX Ex I/O modules in a FLEX Ex rack to a ControlNet scanner port across a ControlNet network | 5 Mbps | Requires a remote ControlNet PLC-5 controller. | Quad shield RG-6 coaxial cable | 8.5 W | 640 mA |

ControlNet Hot Backup Module

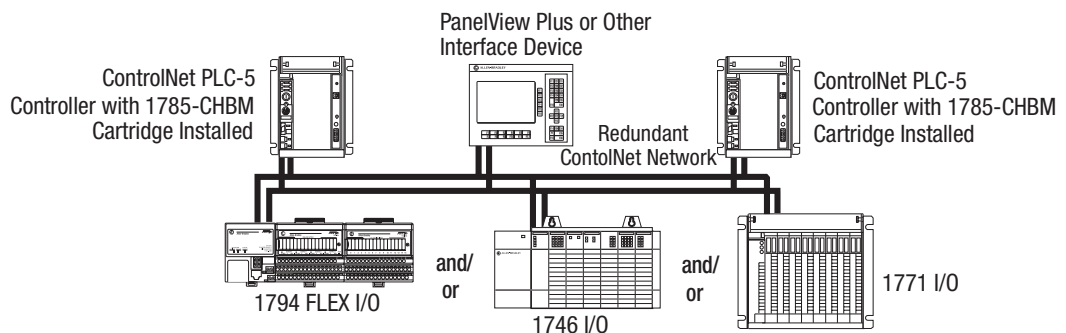


The ControlNet Hot Backup Module provides backup of ControlNet I/O. A secondary controller qualifies critical control information with the primary controller. Both controllers consume information from inputs and connect to outputs, but only the primary controller controls the outputs. The secondary controller establishes control of outputs if the primary controller shuts down.

ControlNet Hot Backup Basic System

| Cat. No. | Quantity | Description |
|---|---|--|
| 1785-CHBM | 2 | ControlNet Hot Backup Modules |
| 1785-L40C15/F or 1785-L80C15/F ⁽¹⁾ | 2 | ControlNet PLC-5 Programmable Controllers, Series F or later |
| 1771-A1B through 1771-A4B | 2 | 1771 I/O Chassis |
| 1771-P4 through 1771-P10 | 2 | 1771 Power Supplies |
| 1771-ACN(R)15, 1747-ACN(R), or 1794-ACN(R) | 1 | ControlNet Adapter |
| 1784-KTCX15 or 1784-PCC card | 1 | Communication card for personal computer or laptop computer |
| 9234 Series | 1 | RSLogix 5 Programming Software, version 3.22 or later |
| 9357-CNETL3 | 1 | RSNetWorx for ControlNet Software, version 1.80.xx or later |
| 9234 Series | 1 | RSLink Gateway Communication Software, version 2.00.97.30 or later |
| Other System Requirements | ControlNet network cables, taps, and terminators for connections between the PLC-5 controllers and I/O adapters | |

⁽¹⁾Both controllers must have the same series and firmware revision.

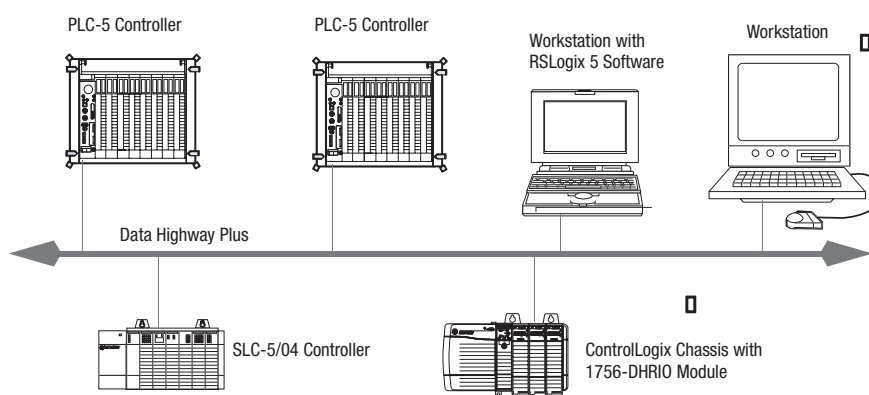


Data Highway Plus

The Data Highway Plus (DH+) network is a local area network designed to support remote programming and data acquisition for factory-floor applications. You can also use DH+ communication modules to implement a small peer-to-peer network.

You can use a DH+ network for data transfer to other PLC-5 controllers or high-level computers and as a link for programming multiple PLC-5 controllers. A PLC-5 controller can communicate over a DH+ network with other controllers and with a workstation.

The DH+ network supports daisy-chain and trunkline-dropline configurations.



| Cat. No. | Function | Comm. Rate | Connections | Design Considerations | Cable | Power Dissipation, Max | Backplane Current Load |
|----------|---|--|-----------------|----------------------------|---|------------------------|------------------------|
| 1785-KA | Provides an interface between Data Highway Plus and Data Highway-485 link | <ul style="list-style-type: none"> DH+ 57 Kbps DH-485 configurable | DH+ DH-485 | Place in the local chassis | <ul style="list-style-type: none"> Data Highway 1770-CD RS-232 1770-CG or Modem Interface Cable 1770-CP | 10.5 W | 2.0 A |
| 1785-KE | Provides an interface between Data Highway Plus and RS-232-C link | <ul style="list-style-type: none"> DH+ 57 Kbps RS-232-C configurable | DH+ RS-232-C | Place in the local chassis | <ul style="list-style-type: none"> Data Highway 1770-CD RS-232 1770-CG or Modem Interface Cable 1770-CP | 6.3 W | 1.2 A |

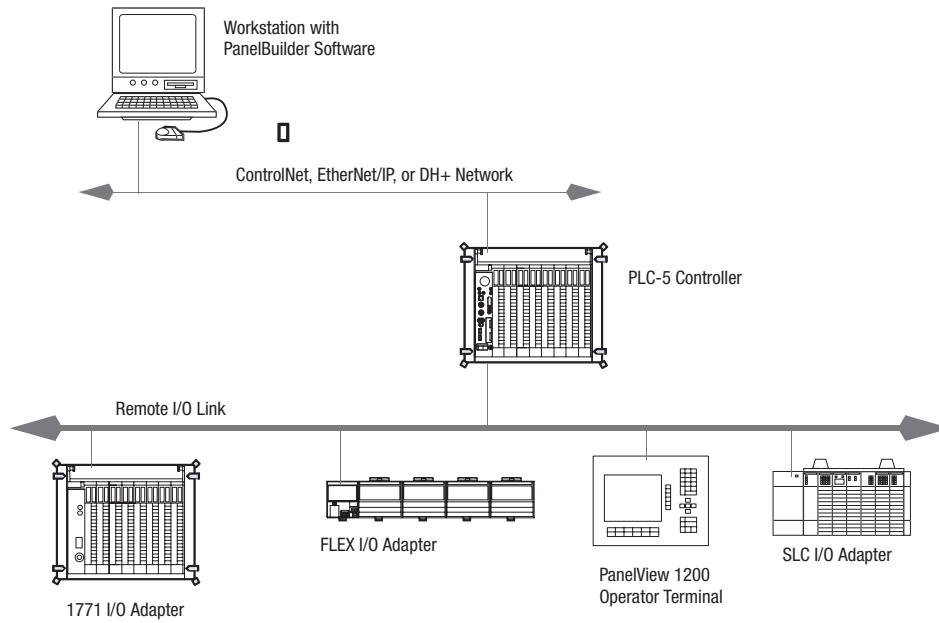
Remote I/O

The strength and versatility of the remote I/O network comes from the breadth of products it supports. In addition to 1771 I/O, the remote I/O network supports many Rockwell Automation and third-party devices.

Typical applications range from simple I/O links with controllers and I/O, to links with a variety of other devices. You connect devices through remote I/O adapter modules or built-in remote I/O adapters.

Using the remote I/O network instead of direct-wiring a device over a long distance to a local I/O chassis helps reduce installation, startup, and maintenance costs by placing the I/O closer to the sensors and actuators.

Some devices, like PLC-5 support Pass-Through, let you configure devices on a remote I/O network from an Ethernet, ControlNet, or Data Highway Plus network.



| Cat. No. | Function | Comm. Rate | Connections | Design Considerations | Cable | Power Dissipation, Max | Backplane Current Load |
|----------|---|-----------------------------------|-------------------------|---|------------------------|------------------------|------------------------|
| 1771-ASB | Interfaces I/O modules in an I/O chassis to a remote scanner port across a remote I/O link | 57.6 Kbps 115 Kbps 230 Kbps | Remote I/O adapter port | Place in a remote chassis. Requires a PLC-5 controller that supports remote I/O | 1770-CD Belden 9463 | 5.2 W | 1.0 A |
| 1771-DCM | Provides a remote I/O adapter port for a local PLC-5 controller to communicate with a remote I/O scanner port of a supervisory process across a remote I/O link | 57.6 Kbps 115.2 Kbps | Remote I/O adapter port | Place in the local chassis | 1770-CD Belden 9463 | 6.3 W | 1.2 A |

ControlNet PLC-5 Controllers



The ControlNet PLC-5 controller offers embedded ControlNet communication capabilities for control and information processing. The ControlNet network provides both I/O control and peer-to-peer communications on a 5 Mbps network, with repeatability and determinism.

You can have multiple ControlNet PLC-5 controllers on one ControlNet network, with each controller handling its own I/O on the network, and at the same time communicating with each other. Multiple controllers can receive input data from one I/O or device node.

| Cat. No. | User Memory (words), Max | Total I/O, Max | Channels | Number of I/O Chassis, Max | | | ControlNet I/O Map Entries | Power Dissipation, Max | Backplane Current Load |
|--------------------------|--------------------------|--|---|----------------------------|-----------------|--------|----------------------------|------------------------|------------------------|
| | | | | Total | Extended -local | Remote | | | |
| 1785-L20C15 | 16,000 | 512 any mix or 512 in + 512 out (complement) | 1 ControlNet 1 DH+ 1 DH+/remote I/O | 77 | 0 | 12 | 64 | 15.8 W | 3.0 A |
| 1785-L40C15 | 48,000 | 2048 any mix or 2048 in + 2048 out (complement) | 1 ControlNet 2 DH+/remote I/O | 125 | 0 | 60 | 96 | 15.8 W | 3.0 A |
| 1785-L46C15 Protected | 48,000 | 2048 any mix or 2048 in + 2048 out (complement) | 1 ControlNet 2 DH+/remote I/O | 125 | 0 | 60 | 96 | 15.8 W | 3.0 A |
| 1785-L80C15 | 100,000 | 3072 any mix or 3072 in + 3072 out (complement) | 1 ControlNet 2 DH+/remote I/O | 125 | 0 | 92 | 128 | 15.8 W | 3.0 A |

Back Up Controller Memory

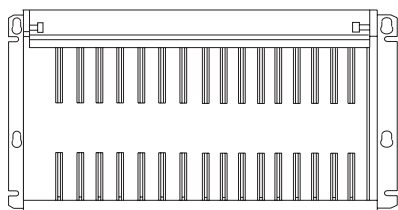
You can back up program files using an EEPROM module.

| Cat. No. | Provides this amount of backup memory |
|--------------------------|---------------------------------------|
| 1785-ME16 ⁽¹⁾ | 16,000 words |
| 1785-ME32 | 32,000 words |
| 1785-ME64 | 64,000 words |
| 1785-CHBM | 100,000 words |

⁽¹⁾Not for use with ControlNet PLC-5 controllers.

Battery Replacement and Life Estimates

| Cat. No. | Applies to | When used in this controller | At this temperature | Battery Life Estimate | |
|----------|------------------------------------|------------------------------|---------------------|-----------------------|---------------|
| | | | | Power off 100% | Power off 50% |
| 1770-XYC | All PLC-5 Programmable Controllers | PLC-5/11, -5/20 and -5/20E | 60 °C (140 °F) | 256 days | 1.4 years |
| | | | 25 °C (77 °F) | 2 years | 4 years |
| | | All Others | 60 °C (140 °F) | 84 days | 150 days |
| | | | 25 °C (77 °F) | 1 year | 1.2 years |



Select Chassis

Step 4 - Select Chassis:

- With the number of slots you need
- That meet your power supply requirements
- That meet your panel size and space limitations

The PLC-5 programmable controller requires a 1771 chassis to contain the various modules. Chassis are available in sizes of 1, 2, 4, 8, 12, and 16 module slots.

The backplane provides a communication path between the I/O modules and either the controller or the I/O adapter module.

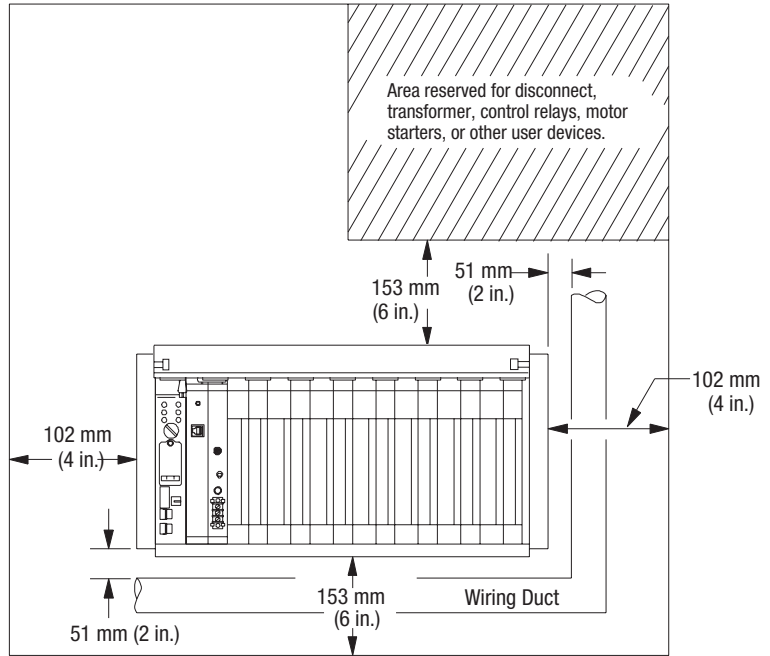
The consistent size and mounting of the available 1771 chassis provide a universal configuration for system design and chassis-mounting configurations. If you anticipate that your system will expand, you may want to purchase a larger chassis for future expansion.

| Cat. No. | Description | No. I/O Slots | Dimensions, Approx. (HxWxD) | Weight, Approx., kg (lb) | Mounting Type |
|-----------|--|---------------|--|--------------------------|---------------------------|
| 1771-A1B | I/O chassis for 1771 I/O modules | 4 slots | 315 x 229 x 193 mm (12.4 x 9.0 x 7.6 in.) | 3.6 (8.0) | Back-panel |
| 1771-A2B | I/O chassis for 1771 I/O modules | 8 slots | 315 x 356 x 193 mm (12.4 x 14.0 x 7.6 in.) | 4.7 (10.3) | Back-panel |
| 1771-A3B | I/O chassis for 1771 I/O modules | 12 slots | 339 x 484 x 217 mm (13.5 x 19.0 x 8.5 in.) | 3.6 (8.0) | 19-in. rack or back-panel |
| 1771-A3B1 | I/O chassis for 1771 I/O modules | 12 slots | 315 x 483 x 193 mm (12.4 x 19.0 x 7.6 in.) | 5.7 (12.6) | Back-panel |
| 1771-A4B | I/O chassis for 1771 I/O modules | 16 slots | 315 x 610 x 193 mm (12.4 x 24.0 x 7.6 in.) | 6.7 (14.8) | Back-panel |
| 1771-PSC | Power-supply chassis (for connecting power directly or through a cable to an I/O chassis). Slots for installation of power supplies and modules requiring only power from the backplane. | 4 slots | 311 x 203 x 180 mm (12.2 x 8.0 x 7.1 in.) | 1.9 (4.1) | Back-panel |
| 1771-AM1 | I/O chassis with integral remote I/O adapter and power supply (3 A available for I/O modules) | 1 slot | 298 x 70 x 187 mm (11.7 x 2.7 x 7.3 in.) | 1.4 (3.0) | Back-panel |
| 1771-AM2 | I/O chassis with integral remote I/O adapter and power supply (3 A available for I/O modules) | 1 slot | 298 x 130 x 187 mm (11.7 x 5.1 x 7.3 in.) | 2.3 (5.0) | Back-panel |

Mounting Dimensions

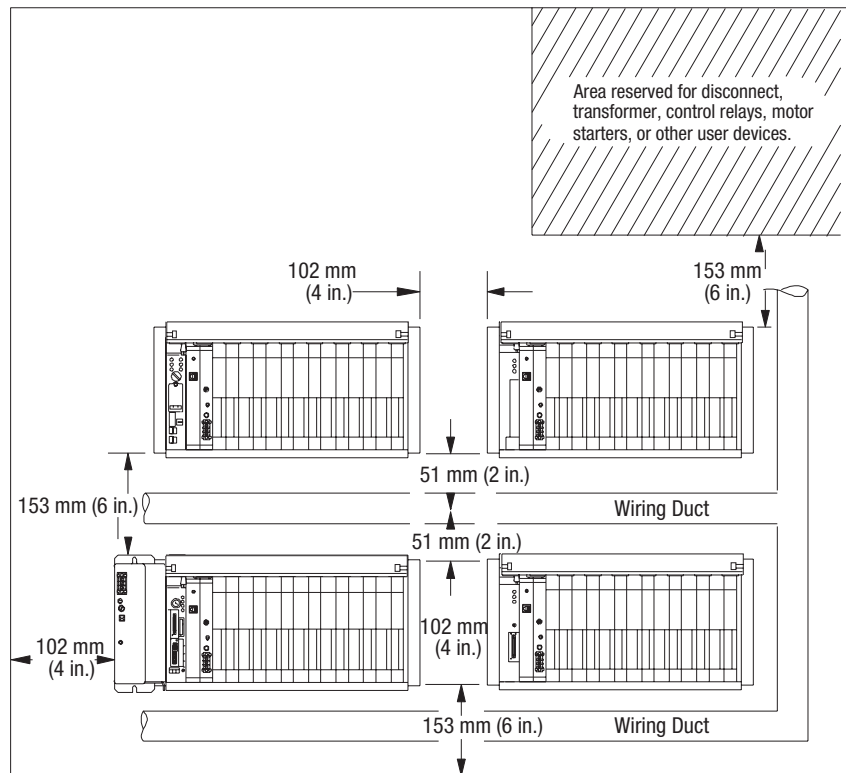
Minimum Spacing Requirements for a Controller-resident Chassis

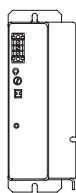
- Mount the I/O chassis horizontally.
- Allow 153 mm (6 in.) above and below the chassis.
- Allow 102 mm (4 in.) on the sides of each chassis.
- Allow 51 mm (2 in.) vertically and horizontally between any chassis and the wiring duct or terminal strips.
- Leave any excess space at the top of the enclosure, where the temperature is the highest.



Minimum Spacing Requirements for a Remote I/O and Extended-local I/O Chassis

- Mount the I/O chassis horizontally.
- Allow 153 mm (6 in.) above and below all chassis. When you use more than one chassis in the same area, allow 152.4 mm (6 in.) between each chassis.
- Allow 102 mm (4 in.) on the sides of each chassis. When you use more than one chassis in the same area, allow 101.6 mm (4 in.) between each chassis.
- Allow 51 mm (2 in.) vertically and horizontally between any chassis and the wiring duct or terminal strips.
- Leave any excess space at the top of the enclosure, where the temperature is the highest.



**Step 5 - Select:**

- One power supply for each chassis

Select Power Supplies

The 1771 power supplies provide 5V dc power directly to the chassis backplane. These power supplies occupy one or two slots in a 1771 chassis and can provide up to 8 A per supply to the I/O chassis.

These power supplies require no space outside the chassis, except for the 1771-P7P power supply. The 1771 power supplies connect directly to the chassis backplane and can be paralleled to provide greater current. Redundancy is available for greater availability.

| Cat. No. | Input Voltage, Nom | Input Voltage Range | Real Input Power, Max | Apparent Input Power, Max | Transformer Load, Max | User Output Current | Backplane Output Current | Frequency | Location, No. of Slots |
|-----------|--|----------------------------|-----------------------|---------------------------|-----------------------|--|---|--------------|------------------------|
| 1770-P1 | 120V ac or 220/240V ac | 105-125V ac 205-250V ac | 20 W | 37V A | 50V A | 300 mA @ +5V dc +150 mA @ +15Vdc -150 mA @ 15V dc | N/A | 50...440 Hz | Standalone |
| 1771-P4S | 120V ac | 97-132V ac | 59 W | 89V A | 148V A | none | 8 A @ +5V dc | 47...63 Hz | 1771 Chassis, 1 slot |
| 1771-P5 | 24V dc | 20.5-30V dc | 57 W | N/A | N/A | none | 8 A @ +5V dc | dc/Rect sine | 1771 Chassis, 2 slots |
| 1771-P5E | 24V dc (has selectable power-loss delay) | 20.5-30V dc | 57 W | N/A | N/A | none | 8 A @ +5V dc | dc/Rect sine | 1771 Chassis, 2 slots |
| 1771-P4S1 | 100V ac | 85-120V ac | 56 W | 89V A | 140V A | none | 8 A @ +5V dc | 47...63 Hz | 1771 Chassis, 1 slot |
| 1771-P6S1 | 200V ac | 170-240V ac | 56 W | 89V A | 140V A | none | 8 A @ +5V dc | 47...63 Hz | 1771 Chassis, 1 slot |
| 1771-P4R | 120V ac | 97-132V ac | 59 W | 92V A | 148V A | none | 8 A @ +5V dc | 47...63 Hz | 1771 Chassis, 1 slot |
| 1771-P6R | 220V ac | 194-264V ac | 59 W | 92V A | 148V A | none | 8 A @ +5V dc | 47...63 Hz | 1771 Chassis, 1 slot |
| 1771-P6S | 220V ac | 194-264V ac | 56 W | 89V A | 140V A | none | 8 A @ +5V dc | 47...63 Hz | 1771 Chassis, 1 slot |
| 1771-P7 | 120V ac or 220V ac | 97-132V ac 195-264V ac | 108 W | 176V A | 270V A | none | 16 A @ +5V dc | 47...63 Hz | Standalone |
| 1771-PS7 | 120V ac or 220V ac | 97-132V ac 195-264V ac | 171 W | 257V A | 427V A | 8 A @ 5V dc 2 A @ 15V dc 2 A @ -15V dc 2.5 A @ 24V dc | 16 A @ +5V dc (total output power including user is 100 W max) | 47...63 Hz | Standalone |
| 1771-P10 | 125V dc | 97-145V dc | 51 W | N/A | N/A | none | 8 A @ +5V dc | dc/Rect sine | 1771 chassis, 2 slots |

For more information, see the 1771 I/O Chassis and Power Supplies Product Data, publication 1771-2.185.

Power Requirements and Transformer Sizing

Each ac input power supply generates a shutdown signal on the backplane whenever the ac line voltage drops below its lower voltage limit. It removes the shutdown signal when the line voltage comes back up to the lower voltage limit. This shutdown is necessary so that only valid data is stored in memory.

The external transformer rating (V A) of each power supply is greater than its real input power (W) because a capacitor-input ac/dc supply draws power only from the peak of the ac voltage wave form. If the transformer is too small, it clips the peak of the sine wave, when the voltage is still above the lower voltage limit. The power supply will sense this clipped wave form as low voltage and could prematurely shut down modules in the chassis.

The following Power Load and Transformer Sizing graphs display the backplane power load on the vertical axis.

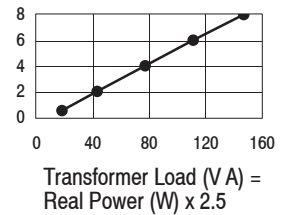
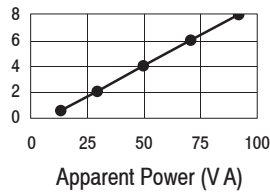
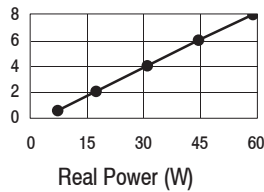
Since these supplies have multiple outputs, the backplane power load is given in watts.

- Use the real power value (W) for determining the amount of heat dissipation you will have inside the enclosure.
- Use the apparent power value (V A) for estimating power distribution sizing.
- Use the transformer load value (V A) of each power supply plus all other loads on a transformer to determine the required transformer size.

Power Load and Transformer Sizing

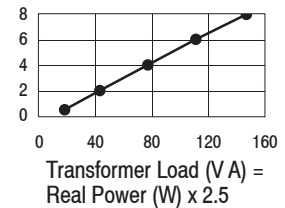
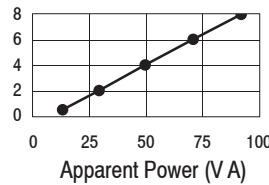
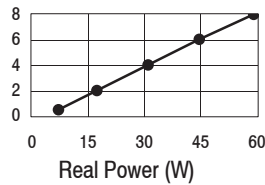
1771-P4S, -P6S,
-P4S1, -P6S1
ac/dc

Backplane
Current Load
(A)



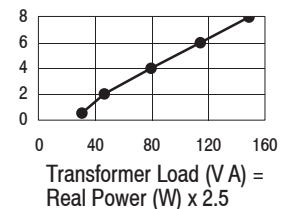
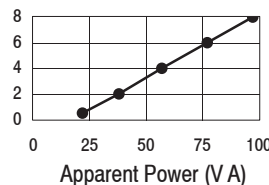
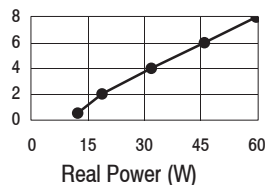
1771-P4R, -P6R
ac/dc
1 Unit

Backplane
Current Load
(A)



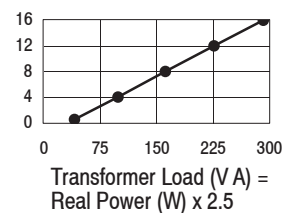
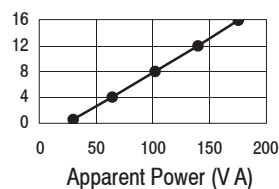
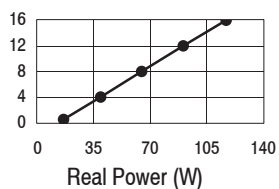
1771-P4R, -P6R
ac/dc
2 Units

Backplane
Current Load
(A)



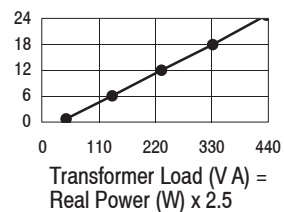
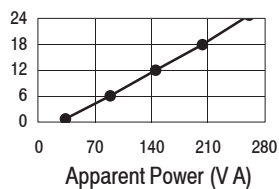
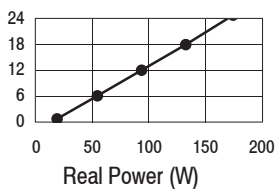
1771-P4R, -P6R
ac/dc
3 Units

Backplane
Current Load
(A)



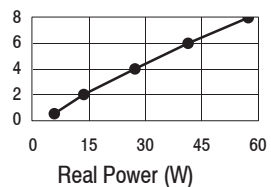
1771-P4R, -P6R
ac/dc
4 Units

Backplane
Current Load
(A)



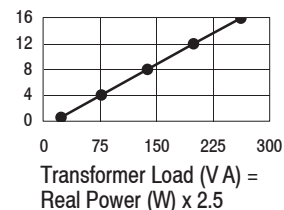
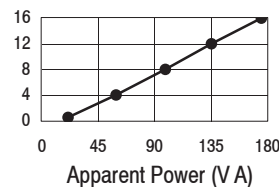
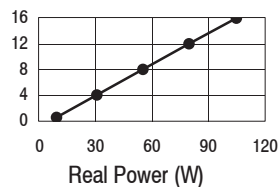
1771-P5, -P5E
dc/dc

Backplane
Current Load
(A)



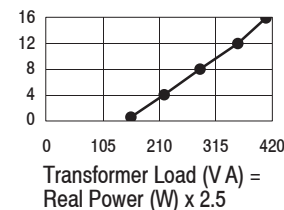
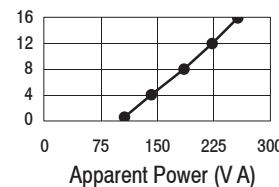
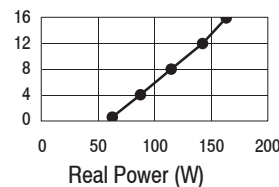
1771-P7
ac/dc

Backplane
Current Load
(A)



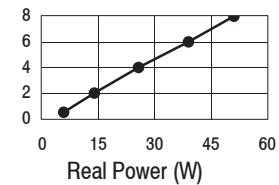
1771-PS7
ac/dc

Backplane
Current Load
(A)



1771-P10
dc/dc

Backplane
Current Load
(A)



Step 6 - Select:

- RSLogix 5 Programming Software
- RSLinx Software
- RSNetWorx Network Configuration Software
- RSLogix Emulate 5 Emulation Software
- PLC-5 Controller and Training Software
- ViewAnyWare Products

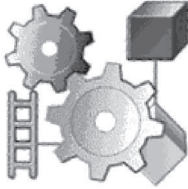
Select Software

Your selection of communication modules and network configuration determines what software packages you need to configure and program your system.

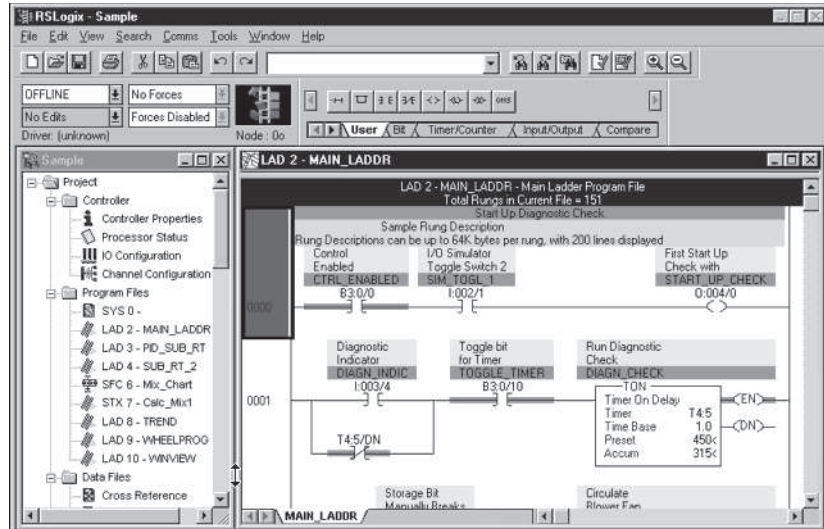
The PLC-5 controllers support multiple industry-standard programming languages. You can program in structured text, function block, sequential function charts, or ladder logic. This versatility means you can maintain and troubleshoot programs in the same language that you develop them.

| To use a | You need | Order this cat. no. |
|--|--|---|
| PLC-5 Programmable Controller | RSLogix 5 software | 9234-RL5300ENE |
| PLC-5 Programmable Controller on ControlNet | RSLogix 5 software with RSNetWorx for ControlNet software | 9234-RWCNTENE (RSLogix 5 software plus RSNetWorx for ControlNet software) |
| 1771-SDN DeviceNet Scanner Module | RSLogix 5 software with RSNetWorx for DeviceNet software | 9234-RL5300NXENE (RSLogix 5 software plus RSNetWorx for DeviceNet software) |
| PLC-5-based system you want to emulate | RSLogix Emulate 5 software | 9324-RL350END (RSLogix 5 software plus RSLogix Emulate 5 software) |
| Operator interface | RSView32 software | ViewAnyWare products (see page 51) |
| PLC-5 single software solution for all your PLC-5 software needs | RSLogix 5 Professional software with ControlNet, DeviceNet and EtherNet/IP | 9324-RL5700NXENE |

Programming Software



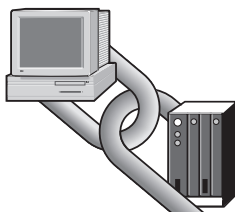
Use RSLogix 5 programming software to configure 1771 I/O and communication modules and to program the PLC-5 programmable controller. RSLogix 5 software offers relay ladder, structured text, function block diagram, and sequential function chart editors for you to develop application programs.



RSLogix 5 Software Requirements

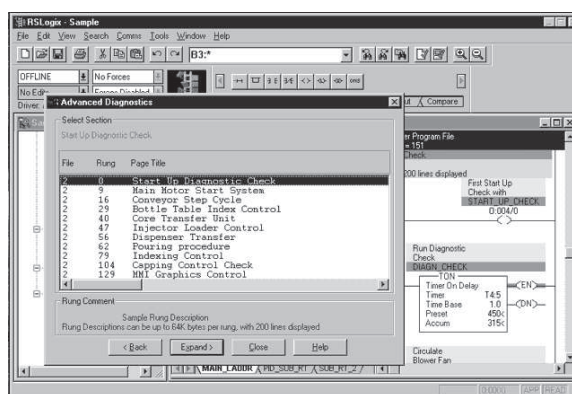
| Description | Min | Recommended |
|-----------------------|---|----------------------------------|
| Personal computer | Intel Pentium II or greater | Intel Pentium III 700 MHz |
| Software requirements | Supported: <ul style="list-style-type: none"> • Microsoft Windows XP • Microsoft Windows 2000 • Microsoft Windows ME | |
| RAM | 128 MB | 256 MB |
| Hard disk space | 70 MB (or more, based on application requirements) | |
| Video requirements | 256-color VGA graphics adapter, 800 x 600 resolution | True Color 1024 x 768 resolution |

RSLinx Software



RSLinx software, 9355 series, is a communication server package that provides plant-floor device connectivity for a wide variety of applications. RSLinx software can support multiple software applications simultaneously communicating to a variety of devices on many different networks.

RSLinx software provides a user-friendly graphical interface for navigating through your network. Select a device and click to access a variety of integrated configuration and monitoring tools. A complete set of communication drivers is provided for your networking needs, including Allen-Bradley networks.



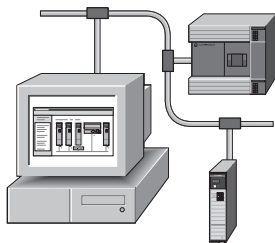
RSLinx software is available in multiple packages to meet the demand for a variety of cost and functionality requirements.

RSLinx System Requirements

| Description | Value |
|-----------------------|--|
| Personal computer | Intel Pentium 100 MHz (faster processor improves performance) |
| Software requirements | Supported: <ul style="list-style-type: none"> • Microsoft Windows XP • Microsoft Windows 2000 • Microsoft Windows NT version 4.0 with Service Pack 3 or greater • Microsoft Windows ME • Microsoft Windows 98 |
| RAM | 32 MB min 64 MB recommended |
| Hard disk space | 35 MB (or more, based on application requirements) |
| Video requirements | 16-color VGA graphics display, 800 x 600 or greater resolution |

In most cases, RSLinx Lite software comes bundled with controller programming packages.

Network Configuration Software



Use RSNetWorx for ControlNet (9324-CNETL3) and RSNetWorx for DeviceNet (9324-DNETL3) software to configure and schedule tools for your ControlNet or DeviceNet networks. RSNetWorx software lets you create a graphical representation of your network configuration and configure the parameters that define your network.

RSNetWorx for ControlNet software schedules network components. The software automatically calculates network bandwidth for the entire network, as well as the bandwidth used by each network component. You must have RSNetWorx software to configure and schedule the ControlNet networks in your PLC-5 programmable controller system.

RSNetWorx for DeviceNet software configures the DeviceNet I/O devices and creates the scan list. The 1771-SDN DeviceNet scanner module stores the configuration information and scan list.

RSNetWorx System Requirements

| Description | ControlNet | DeviceNet | EtherNet/IP |
|-----------------------|--|---|---|
| Personal computer | Intel Pentium or Pentium-compatible | | |
| Software requirements | Supported: <ul style="list-style-type: none"> • Microsoft Windows XP • Microsoft Windows 2000 Terminal Server • Microsoft Windows NT version 4.0 with Service Pack 6 or later • Microsoft Windows ME • Microsoft Windows 98 | | |
| RAM | 32 MB min more memory is required for large networks | | |
| Hard disk space | Min: 115 MB (includes program files and hardware files) Full support: 168...193 MB (includes program files, online help, tutorial, and hardware files) | Min: 190 MB (includes program files and hardware files) Full support: 230...565 MB (includes program files, online help, tutorial, and hardware files) | Min: 108 MB (includes program files and hardware files) Full support: 115...125 MB (includes program files, online help, tutorial, and hardware files) |
| Video requirements | 16-color VGA graphics adapter, 640 x 480 resolution min, 800 x 600 resolution recommended | | |
| Other | RSLinx Lite software 2.4 or later to use RSNetWorx online | RSLinx Lite software 2.4 or later to use RSNetWorx online | RSLinx Lite software 2.41 or later to use RSNetWorx online |