CompactLogix5320

Catalog Number 1769-L20

Take advantage of the Logix control engine. The CompactLogix5320 controller supports all the shared Logix functions and execution model. CompactLogix, as a member of the Logix family, is part of a complete system-level architecture.

Reduce program development and training costs. CompactLogix uses the same RSLogix 5000 programming editor as the other Logix controllers. So, if you know how to program one of the Logix controllers, you know how to program them all.

Utilize all the benefits of the Compact I/O architecture. The 5320 controller connects directly to existing Compact I/O modules. That means the CompactLogix system offers you modular, rackless construction. It also provides you with greater flexibility, eases initial assembly and speeds module replacement.

Features and Benefits

By utilizing the Logix Control Engine, CompactLogix supports the Logix Instruction set, tasking model, and data model. Application programs created for other Logix controllers can be easily ported to the CompactLogix controller.

RSLogix 5000 provides a single programming environment for the Allen-Bradley ControlLogix™, FlexLogix™, SoftLogix™, and CompactLogix™ controllers. Results in reduced program development and training costs.

Built-in RS-232 programming port supporting DF1 Full- and Half-Duplex protocols, DH-485[1] protocol, and ASCII support. Provides for direct connection for programming, operator interface devices, and ASCII devices, as well as dial-in remote programming. Allows for networking of up to 255 devices, communications using modems, such as radio modems or leased lines, and remote programming/monitoring.

Direct connection capability to DH-485[1], DeviceNet, or Ethernet[2] network interfaces. By using the DH-485 communication interface, CompactLogix can be connected to a DH-485 network of up to 32 devices for peer-to-peer messaging. The DeviceNet communication interface provides a connection to a DeviceNet network of up to 64 devices with slave I/O, peer-to-peer messaging, and programming capability (upload/download, monitoring, on-line editing). The Ethernet communication interface provides a connection to an Ethernet network for peer-to-peer messaging and programming capability (upload/download, monitoring, on-line editing).

The CompactLogix controller has seven diagnostic LEDs on the front of the controller to indicate controller **mode, I/O connection status, forces enable status, battery status,** controller **fault indication, default communication configuration active, and RS-232 port activity.** Allows maintenance personnel to determine the current operating condition of the controller.

The on/off state of each discrete output point, and data value of each analog output channel can be individually programmed to hold the state/value, reset the state/value or go to a User defined state (on/off) for discrete outputs or a particular value for analog outputs. Provides the ability to pre-determine the mode change and failure operation of the outputs based on their unique application requirements.

The CompactLogix controller includes a default communication push-button. Provides a quick and easy way to restore the default serial port configuration and directly connect to the controller with the programming software.

Modular and rackless construction with front access removal and insertion, DIN rail or panel mountable, integrated high performance serial bus, and removable terminal blocks. Provides greater flexibility, lowers cost of inventory and commissioning, eases initial assembly, and speeds module replacement.

UL, C-UL and CE certified. Conforms to global standards allowing for easy shipment around the world.

Table of Contents

(1) DH-485 communication is not available with the R7 release of RSLogix 5000. DH-485 communication will be available in a future revision.

(2) Available Spring 2001.

System Overview

CompactLogix is a powerful, yet compact new control system. It provides an ideal solution for your smaller, machine-level control applications, including RTU/SCADA applications requiring a low-cost, modular solution.

Programming

The CompactLogix system is configured and programmed with RSLogix 5000, the Microsoft Windows NT package shared by other Logix controllers. Multiple programming language support, including ladder and function block diagram, provide programming flexibility to meet the demands of a wide variety of applications.

CompactLogix uses the Logix control engine, which means CompactLogix supports the Logix instruction set, tasking model and data model.

- By sharing the same instruction set as all other Logix controllers, application programs created for other Logix controllers can be easily ported to the CompactLogix controller.
- The multi-tasking operating system supports four configurable tasks that can be prioritized for executing the program code according to the application. Tasks can contain up to 32 programs, each containing separate routines, providing a high level of application program organization.
- Symbolic addressing lets you identify data by its use in the application, independent of the hardware. You can create libraries of standard routines that can be re-used on multiple machines or applications.

Networks

The CompactLogix system also provides you with peer-to-peer communications to legacy devices via the following communication interface devices:

- DH-485 (via 1761-NET-AIC)[1]
- DeviceNet (via 1761-NET-DNI)
- Ethernet (via 1761-NET-ENI)[2]

(1) DH-485 communication is not available with the R7 release of RSLogix 5000. DH-485 communication will be available in a future revision.

(2) Available Spring 2001.

The Controller

The 5320 controller also provides you with the following
features and functionality:

- 3-position keyswitch
- Battery backed memory
- Channel 0 default communication push button
- Built-in RS-232 port
- 7 diagnostic LEDs
- Integrated Compact/1769 Bus

Compact I/O

The 5320 controller is designed to directly connect to existing Compact I/O
modules. Compact I/O provides:

- system expansion beyond the limits of one power supply.
- front-access removal and insertion.
- removable terminal blocks for easy installation and replacement.

You can DIN-rail or panel-mount the controller and I/O. Together, the
CompactLogix controller and Compact I/O provide you with a truly scalable
system solution.

A simple system can consist of only a stand-alone controller in a single
bank of I/O modules.

CompactLogix
Controller
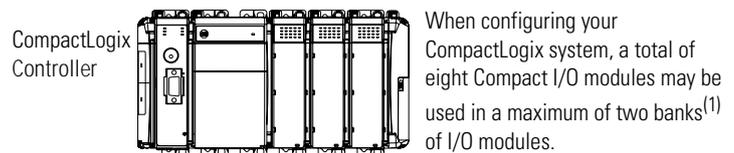
When configuring your
CompactLogix system, a total of
eight Compact I/O modules may be
used in a maximum of two banks[1]
of I/O modules.

One additional bank of I/O modules can be added. The first bank includes the
CompactLogix controller in the far left position. Each bank requires its own
power supply and the controller must be within four slot positions of the power
supply. A maximum of one controller may be used in a CompactLogix system.

CompactLogix
Controller

(1) An I/O bank is a group of I/O modules connected directly to one another. Banks are separated by cables.

Applications

The CompactLogix system is an ideal choice for RTU/SCADA applications requiring a cost-effective, modular solution. CompactLogix provides an excellent solution for many industries including:

- Material Handling (Distributed Processing)
- Assembly Machines
- Food Processing
- Packaging
- RTU applications - (SCADA)
- Water/Waste Water - Pumping/Filtering
- HVAC/Energy Management
- Oven Control
- Pharmaceuticals

Compact I/O Modules

Designed as "PLC-style" I/O, Compact I/O modules are vertically oriented, with removable terminal blocks. Their rackless design, integrated bus, and front access insertion and removal features contribute to their superior functionality at an extremely competitive price.

Compact I/O provide users with the following features:

- Modular system, allowing mixing modules to suit the application
- Feature-rich I/O functionality to address a wide range of applications
- Rackless design, eliminating added system costs and inventory
- Small footprint, shrinking panel space requirements
- Front insertion and removal, reducing assembly and replacement time
- Unique tongue-and-groove interlocking case design, ensuring a strong, mechanical connection between modules
- Integral high-performance I/O bus
- Software keying, preventing incorrect positioning within the system
- Analog I/O, AC/DC relay, 24V dc, and 120/240V ac voltages

Available modules include:

Catalog No.	Description
1769-IA16	16-point 120V ac Input Module
1769-IA8I	8-point Individually Isolated 120V ac Input Module
1769-OA8	8-point 120/240V ac Output Module
1769-IM12	12-point 240V ac Input Module
1769-IQ16	16-point 24V dc Sinking/Sourcing Input Module
1769-OB16	16-point 24V dc Sourcing Output Module
1769-OB16P	16-point 24V dc Sourcing Output Module with Electronic Protection
1769-OV16	16-point 24V dc Sinking Output Module
1769-OW8	8-point ac/dc Relay Output Module
1769-OW8I	8-point Individually Isolated ac/dc Relay Output Module
1769-IQ6XOW4	Combination 6-point dc Input and 4-point Relay Output Module
1769-IF4	4-channel analog current/voltage Input Module
1769-OF2	2-channel analog current/voltage Output Module
1769-IR6[1]	6-channel RTD/Resistance Input Module
1769-IT6[1]	6-channel Thermocouple/mV Input Module

(1) Available in January 2001.

Expansion I/O Module Specifications

Discrete Input Specifications

Specification	1769-IM12	1769-IA16	1769-IQ16	1769-IA8I
Voltage Category	200/240V ac	100/120V ac	24V dc (sink/source)	100/120V ac
Voltage Range	159 to 265V ac at 47 Hz to 60 Hz	79 to 132V ac at 47 Hz to 63 Hz	10 to 30V dc at 30°C (86°F) 10 to 26.4V dc at 60°C (140°F)	79V ac to 132V ac at 47 Hz to 63 Hz
Number of Inputs	12	16	16	8
Number of Commons per Module	2[1]	2[1]	2	8
Signal Delay	On Delay: 20 ms max. Off Delay: 20 ms max.		On Delay: 8 ms max. Off Delay: 8 ms max.	On Delay: 20 ms max. Off Delay: 20 ms max.
Input Compatibility	IEC Type 1+			

(1) This module has two internally connected common terminals.

Discrete Output Specifications

Specification	1769-OA8	1769-OB16	1769-OB16P	1769-OV16	1769-OW8	1769-OW8I
Voltage Category	100 to 240V ac	24V dc		24V dc	AC/DC normally open relay	
Operating Voltage Range	85 to 265V ac at 47 to 63 Hz	20.4 to 26.4V dc (source)		20.4 to 26.4V dc (sink)	5 to 265V ac 5 to 125V dc	
Number of Outputs	8	16			8	
Number of Commons per Module	2	1			2	8
Continuous Current per Point (max.)	0.25A at 60°C (140°F) 0.5A at 30°C (86°F)	0.5A at 60°C (140°F) 1.0A at 30°C (86°F)			2.5A	
Continuous Current per Common (max.)	n/a				8A	2.5A
Continuous Current Per Module (max.)	2.0 A at 60°C (140°F) 4.0 A at 30°C (86°F)	4.0A at 60°C (140°F) 8.0A at 30°C (86°F)			16A	
Signal Delay (max.)	turn on = 1/2 cycle turn off = 1/2 cycle	turn on = 0.1 ms turn off = 1.0 ms	turn on = 1.0 ms turn off = 2.0 ms	turn on = 0.1 ms turn off = 1.0 ms	turn on = 10 ms turn off = 10 ms	turn on = 10 ms turn off = 10 ms

1769-IQ6XOW4 Input and Output Specifications

Specifications	1769-IQ6XOW4
Voltage Category	24V dc (sink/source) inputs – AC/DC normally open relay outputs
Operating Voltage Range	inputs: 10 to 30V dc at 30°C (86°F) and 10 to 26.4V dc at 60°C (140°F) outputs: 5 to 265V ac or 5 to 125V dc
Number of Inputs	6
Number of Outputs	4
Number of Commons per Module	2 (one for inputs, one for outputs)
Input Compatibility	IEC Type 1+
Input Signal Delay (max.)	on delay = 8.0 ms, off delay = 8.0 ms
Output Signal Delay (max.) - resistive load	turn on = 10 ms, turn off = 10 ms
Continuous Current per Point (max.)	2.5A (outputs)
Continuous Current per Common (max.)	8A (outputs)

Analog I/O Modules

1769-IF4 Input Specifications

Specification	1769-IF4
Analog Normal Operating Ranges	Voltage: ±10V dc, 0 to 10V dc, 0 to 5V dc, 1 to 5V dc Current: 0 to 20 mA, 4 to 20 mA
Number of Inputs	4 differential or single-ended
Resolution (max.)	14 bits minimum (unipolar) 14 bits plus sign (bipolar), with 50 or 60 Hz filter selected
Normal Mode Rejection Ratio	Voltage: -10 dB at 50 Hz, -12 dB at 60 Hz Current: -15 dB at 50 Hz, -18 dB at 60 Hz
Input Impedance	Voltage Terminal: 200K Ω, Current Terminal: 250 Ω
Overall Accuracy[1]	Voltage Terminal: ±0.2% full scale at 25°C Current Terminal: ±0.35% full scale at 25°C
Module Error over Full Temperature Range (0 to +60°C [+32°F to +140°F])	Voltage: ±0.3% Current: ±0.5%
Field Input Calibration	Not required
Channel Diagnostics	Over- or under-range by bit reporting

(1) Includes offset, gain, non-linearity and repeatability error terms.

1769-OF2 Output Specifications

Specification	1769-OF2
Analog Ranges	Voltage: ±10V dc, 0 to 10V dc, 0 to 5V dc, 1 to 5V dc Current: 0 to 20 mA, 4 to 20 mA
Number of Outputs	2 single-ended
Resolution (max.)	14 bits minimum (unipolar) 14 bits plus sign (bipolar), with 50 or 60 Hz filter selected
Conversion Rate (all channels) max.	2.5 ms
Current Load on Voltage Output	5 mA max.
Resistive Load on Current Output	0 to 500 Ω (includes wire resistance)
Load Range on Voltage Output	> 1k Ω at 5V dc; > 2k Ω at 10V dc
Field Calibration	None required
Overall Accuracy[1]	Voltage Terminal: ±0.5% full scale at 25°C, Current Terminal: ±0.35% full scale at 25°C
Output Error Over Full Temperature Range (0 to 60°C [32 to +140°F])	Voltage: ±0.8% Current: ±0.55%
Open/Short-Circuit Overvoltage Protection	Yes
Output Overvoltage Protection	Yes
Channel Diagnostics	Over-or-under range by bit reporting output wire broken or load resistance high by bit reporting (current mode only)

(1) Includes offset, gain, non-linearity and repeatability error terms.

Power Supplies and Cables

There are four 1769 power supply options:

- 1769-PA2
- 1769-PB2
- 1769-PA4[1]
- 1769-PB4[1]

Just double the width of a standard 1769 I/O module, these power supplies give you the ability to distribute bus/system power to your compact I/O modules from either side.

1769 Power Supplies

- Upper and lower panel mounting tabs
- Terminal identification diagrams
- Barrier-type terminal blocks provided
- Finger-safe covers
- Front access replaceable fuse with cover
- Provides maximum utilization of power supply output current capacity

(1) Available in January 2001.

1769 Bus Expansion Cables

- Allow you to expand the 1769 I/O system beyond the limit of a single power supply
- Provide for system configuration flexibility by allowing horizontal or vertical system expansion

Communication Expansion Bus Cables

Cable Type	Catalog Number	Length[1]
Right bank-to-right bank expansion	**1769-CRR1**	1 ft. (305 mm)
Right bank-to-right bank expansion	**1769-CRR3**	3.28 ft. (1 m)
Right bank-to-left bank expansion	**1769-CRL1**	1 ft. (305 mm)
Right bank-to-left bank expansion	**1769-CRL3**	3.28 ft. (1 m)

(1) Approximate cable length is measured from end-to-end of the cable only.

Using the Power Supply in a CompactLogix System

Use the Expansion Power Supplies to increase your system's capacity for adding I/O modules.

Bank 1

A 1769 I/O power supply is limited in the amount of +5V dc and +24V dc current it can supply to the modules in its I/O bank[1]. These limits depend on the catalog number (e.g. 1769-PA2) of the supply. A bank of modules should not exceed the current limits of the I/O bank power supply[2]. Refer to the *Compact Expansion Power Supplies Installation Instructions*.

(1) An I/O bank is a group of 1769 I/O (8 modules maximum) and a single 1769 I/O power supply.

(2) The CompactLogix controller must be within four slot positions of the power supply.

Power Supplies Specifications

Specification	1769-PA2	1769-PB2	1769-PA4[1]	1769-PB4[1]
Nominal Supply Voltage	120/240V ac (no jumpers)	24V dc	120/240V ac selector switch	24V dc
Voltage Range	85 to 265V ac (wide range; no jumper or DIP switch required) 47 to 63 Hz	19.2 to 31.2V dc	85 to 132V ac or 170 to 265 (switch selectable) 47 to 63 Hz	19.2 to 31.2V dc
Maximum Line Requirement	100 VA at 120V ac 130 VA at 240V ac	50 VA at 24V dc	200 VA at 120V ac 240 VA at 240V ac	100 VA at 24V dc
Green Input Power Available Diagnostic LED	ON (+5 and +24V dc current available from power supply) OFF (No input power; Power-fail enabled, Overvoltage Exceeded/Protection Enabled)			
Maximum Inrush	25A at 132V ac 10Ω source impedance 40A at 265V ac 10Ω source impedance	30A at 31.2V dc	25A at 132V ac 10Ω source impedance 40A at 265V ac 10Ω source impedance	30A
Line Loss Ride Through	10 ms (minimum) to 10s (maximum)		5 ms (minimum) to 10s (maximum)	
Output Bus Current Capacity (0°C to +55°C)	2A at 5V dc 0.8A at 24V dc	2A at 5V dc 0.8A at 24V dc	4A at 5V dc 2A at 24V dc	4A at 5V dc 2A at 24V dc
Output Bus Current Capacity (55°C to +60°C)	Refer to the Temperature Derating graphs on pages 25 through 30 in the *Compact Expansion Power Supplies Installation Instructions*.			
Minimum Load Current	0 mA at 5V dc; 0 mA at 24V dc			
24V dc User Power Capacity (0°C to +55°C)	250 mA[2]	NA		
24V dc User Power Capacity (>+55°C to +60°C)	200 mA[2]	NA		
+24V dc User Voltage Range	20.4V dc to 26.4V dc	NA		
Short Circuit Protection	Front Access Fuse (Replacement part number: Wickmann 19195-3.15A, Wickmann 19343-1.6A, or Wickmann 19181-4A)	Front Access Fuse (Replacement part number: Wickmann 19193-6.3A)	Front Access Fuse (Replacement part number: Wickmann 19195-3.15A or Wickmann 19181-4A)	Front Access Fuse (Replacement part number: Wickmann 19193-6.3A)
+5V 1769 Bus Overvoltage Protection	Yes			
+24V 1769 Bus Overvoltage Protection	Yes			
Isolation Voltage (Input Power to 1769 Bus)	Verified by one of the following dielectric tests:			
	1836V ac for 1s or 2596V dc for 1s	1200V ac for 1s or 1697V dc for 1s	1836V ac for 1s or 2596V dc for 1s	1200V ac for 1s or 1697V dc for 1s
	265V Working Voltage (IEC Class 1 - grounding required)	75V Working Voltage (IEC Class 1 - grounding required)	265V Working Voltage (IEC Class 1 - grounding required)	75V Working Voltage (IEC Class 1 - grounding required)

(1) Available in January 2001.

(2) Refer to the Temperature Derating graphs on pages 25 through 30 in the *Compact Expansion Power Supplies Installation Instructions*.

Expansion Cable Specifications

Specification	
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Operating Humidity	5% to 95% non-condensing
Hazardous Environment Class	Class I, Division 2, Hazardous Location, Groups A, B, C, D (UL 1604, C-UL under CSA C22.2 No. 213)

Communication Choices   The CompactLogix5320 controller provides several communication options to fit into a variety of applications.

The built-in RS-232 programming port supporting DF1 Full- and Half-Duplex protocols, DH-485[1] protocol, and ASCII support. Provides for direct connection for programming, operator interface devices, and ASCII devices, as well as dial in remote programming. Allows for networking of up to 255 devices, communications using modems, such as radio modems or leased lines, and remote programming/monitoring.

By using the DH-485 communication interface, CompactLogix can be connected to a DH-485 network of up to 32 devices for data sharing via peer-to-peer messaging.

The DeviceNet communication interface provides a connection to a DeviceNet network of up to 64 devices with slave I/O, peer-to-peer messaging, and program upload/download capability.

The Ethernet[2] communication interface provides a connection to an Ethernet network with peer-to-peer messaging and program upload/download capability.

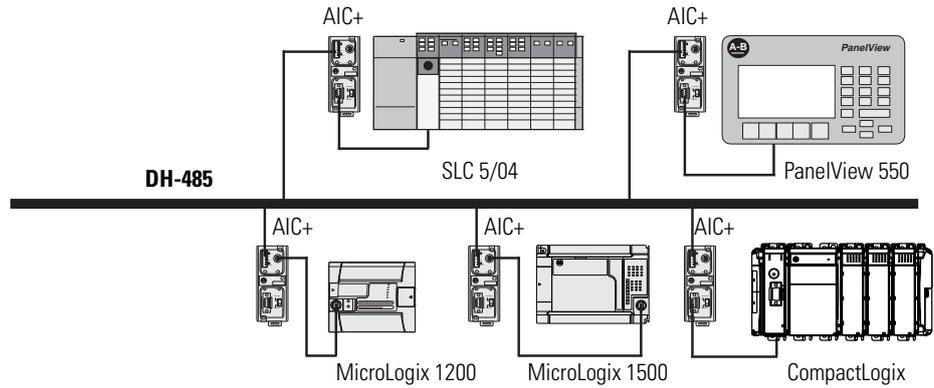CompactLogix allows you to choose the network that best meets your needs.

If your application requires:	Use this network
• High-speed data transfer between information systems and/or a large quantity of controllers • Internet/Intranet connection • Program maintenance	Ethernet via the 1761-NET-ENI[2]
• 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 traditional, hard wired systems	DeviceNet via the 1761-NET-DNI
• Plant-wide and cell-level data sharing • Data sharing between controllers • Compatibility with multiple Allen-Bradley PanelView devices	DH-485[1] via the 1761-NET-AIC
• Connection to dial-up modems for remote program maintenance or data collection • Connection to modems, such as leased-line or radio modems for use in SCADA systems • Remote Terminal Unit (RTU) functions	DF1 Full-Duplex DF1 Half-Duplex Slave

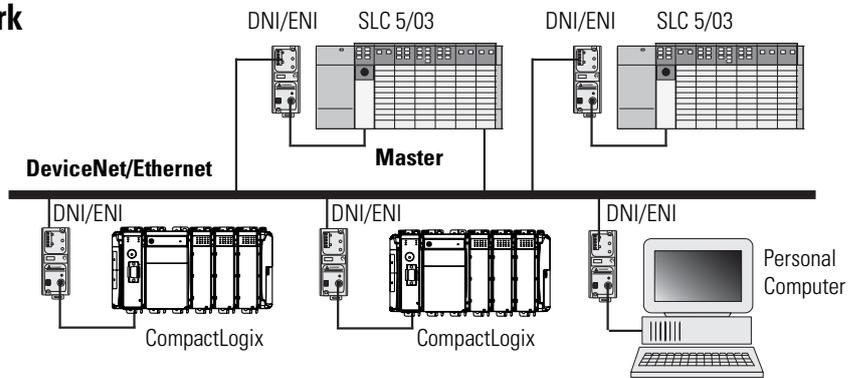See DH-485, DeviceNet, and DF1 Half-Duplex network examples on page 13 for additional information.

(1) DH-485 communication is not available with the R7 release of RSLogix 5000. DH-485 communication will be available in a future revision.

(2) Available Spring 2001.

Local DH-485[1] Network with AIC+ Interface

AIC+

AIC+

SLC 5/04

PanelView 550

DH-485

AIC+

AIC+

AIC+

MicroLogix 1200

MicroLogix 1500

CompactLogix

Local DeviceNet/Ethernet[2] Network with DNI/ENI Interface

DNI/ENI   SLC 5/03

DNI/ENI   SLC 5/03

Master

DeviceNet/Ethernet

DNI/ENI

DNI/ENI

DNI/ENI

Personal Computer

CompactLogix

CompactLogix

Local DF1 Half-Duplex Network

RS-232 (DF1 Half-Duplex Protocol)

Rockwell Software, RSLinx 2.0 (or higher), SLC 5/03, SLC 5/04, and SLC 5/05, or PLC-5 processors configured for DF1 Half-Duplex Master.
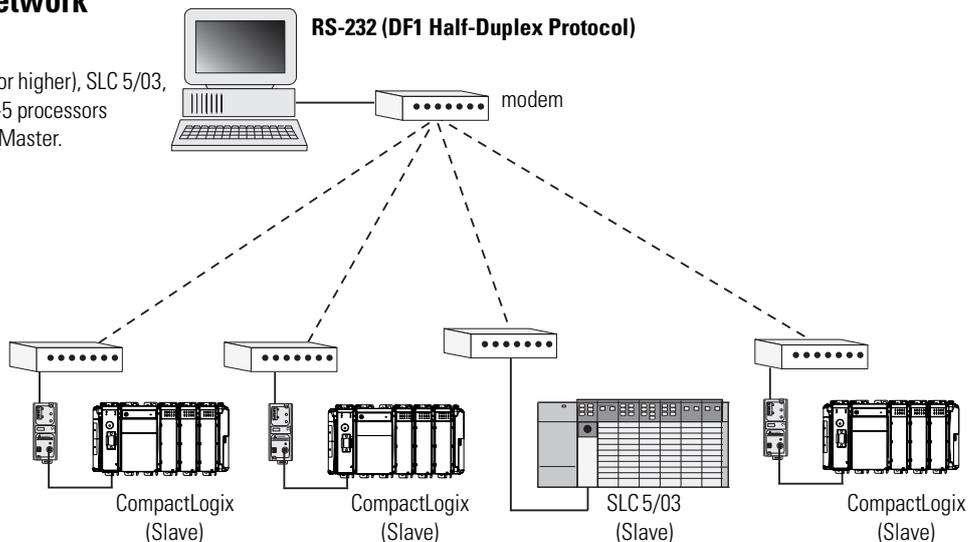
modem

CompactLogix (Slave)

CompactLogix (Slave)

SLC 5/03 (Slave)

CompactLogix (Slave)

(1) DH-485 communication is not available with the R7 release of RSLogix 5000. DH-485 communication will be available in a future revision.

(2) Available Spring 2001.

Programming Software

RSLogix 5000 programming software is IEC 1131-3 compliant software that supports the CompactLogix controller. Operating on Microsoft's Window NT 32-bit operating system, the software maximizes performance, saves development time, and improves productivity. RSLogix 5000, part of the RSLogix family of software products, offers the same reliable functionality.

Drag-and-drop editing lets you quickly move instructions, rungs of logic, routines, programs and tasks either within a single project or between two copies of RSLogix 5000 to create project libraries.

Context menus for common software tools are quickly accessible when you click the right mouse button on addresses, symbols, instruction blocks, rungs, or other application objects. This convenience lets you accomplish a task within a single menu and reduces your need to memorize the locations of features in the menu bar.

In addition, for even greater time-savings and convenience, RSLogix 5000 provides an automatic type-ahead feature that works with the instruction set and tag database to speed your data entry and programming.

Flexible ladder and function block diagram editors let you create application programs with ease. Both function block and ladder routines coexist seamlessly in a single controller so you can choose the most appropriate language to program each component of your application. You can also upload both ladder diagram and function block diagram code and tag name definitions from your controller. This simplifies maintenance because you can always obtain the original source directly from the controller.

RSLogix 5000 programming software is the tool used to configure your CompactLogix controller and its related modules.

System Requirements

Device	Requirement
Computer	IBM-compatible Pentium 90 MHz or greater
Operating System	Microsoft Windows NT version 4.0 with Service Pack 4 RSLinx software must be installed
Memory	32 Mbytes of RAM minimum 64 Mbytes of RAM maximum
Hard Disk	40 Mbytes of free hard disk space (or more based on application requirements)
Display	16-color VGA graphics adapter 640 x 480 resolution (256-color 800 x 600 minimum for optimal resolution)

Operator Interface Devices

Electronic operator interface devices provide you with powerful plant floor control and data monitoring capabilities for improved productivity. They are easy to use, rugged and reliable. Operator interface devices also save valuable panel space and are designed for easy modification as your process expands or changes.

The PanelView™ products listed below are only a partial offering of the PanelView Standard (HMI) Human Interface products. For more information, refer to the PanelView™ Standard Operator Interface Terminals System Overview, publication 2711-SO001A-US-P.

PanelView™ Operator Interface Terminals

The PanelView operator terminals offer electronic operator interface capabilities in a space-saving, flat-panel design. The result is a compact package that is loaded with performance functionality. These terminals feature pixel graphics for enhanced operator screens. The PanelView Standard 300 and 550 interfaces have monochrome LCD displays while the PanelView 600 has either an active matrix thin film transistor (TFT) or passive matrix color display.

PanelView 300 Micro

PanelView 550 Touch Only (Monochrome)

PanelView 600 Keypad (Color)

Controller **Memory Estimation**

The following equations provide an estimate of the memory needed for the 5320 controller. Each of these numbers includes a rough estimate of the associated user programming. Depending on the complexity of your application, you might need more or less memory.

Controller tasks	_____ * 4000	= _____	bytes (minimum 1 needed)
Digital I/O points	_____ * 400	= _____	bytes
Analog I/O points	_____ * 2600	= _____	bytes
Motion axis[1]	_____ * 8000	= _____	bytes
	Total	= _____	bytes

(1) Only virtual axis available.

NOTE	As required by the application, additional memory should be left unused for messaging and other communications operations.

For example, this table list configurations for Location A and Location B.

	Location A:	Location B:
Controller tasks:	1 continuous 1 periodic (STI)	1 continuous
Digital I/O points:	10+18+22+9+5=64	24+15+21+13+5=78
Analog I/O points:	3+2=5	3+2+3=8

The 5320 controller has 64K bytes of user memory available. Estimate memory as shown below:

	Location A (bytes):	Location B (bytes):
Controller tasks:	(2 x 4000) = 8,000	(1 x 4000) = 4000
Digital I/O points:	(64 x 400) = 25,600	(78 x 400) = 31,200
Analog I/O points:	(5 x 2600) = 13,000	(8 X 2600) = 20,800
Total bytes:	46, 600	56,000

Documentation

Related Documentation

Additional user documentation presents information according to the tasks you perform and the programming environment you use. Refer to the table below for information on CompactLogix, 1769 Compact I/O and related publications.

Title	Publication Number
CompactLogix System User Manual	1769-UM007A-EN-P
CompactLogix5320 Controller Installation Instructions	1769-IN047A-EN-P
Logix5000 Controllers Common Procedures Programming Manual	1756-PM001A-EN-P
Logix5000 Controller General Instruction Set Reference Manual	1756-RM003B-EN-P
Compact I/O System Overview	1769-SO001A-EN-P
Compact 1769 Expansion I/O Installation Instructions for your particular module. Installation Instructions are included with each module. Also available via www.theautomationbookstore.com	1769-INxxx
Compact I/O Communication Bus Expansion Cables Installation Instructions	1769-IN014A-US-P
Compact I/O End Caps/Terminators	1769-IN015A-US-P
CompactLogix5320 Controller Installation Instructions	1769-IN047A-EN-P
Compact Expansion Power Supplies Installation Instructions	1769-IN028A-EN-P
Compact 1769 Expansion I/O Power Supplies and Cables Technical Data	1769-TD001A-US-P
1769 Compact Discrete Input/Output Module Technical Data	1769-2.1

To purchase a manual or download a free electronic version, visit us at http://www.theautomationbookstore.com.

Specifications

CompactLogix Controller (1769-L20)

Description	Value
Backplane Current	600 mA at +5V dc; 0 mA at +24V dc
Operating Temperature	0° to +60°C (+32° to +140°F)
Storage Temperature	-40° to +85°C (-40° to +185°F)
Relative Humidity	5% to 95% non-condensing
Power Supply Distance Rating	4 (The controller must be within four slot positions of the power supply.)
Vibration	Operating: 10 to 500 Hz, 5G, 0.030 mm (in.) peak-to-peak
Shock	Operating: 30G, 11 ms, panel mounted (20G, 11 ms, DIN rail mounted) Non-operating: 40G, panel mounted (30G, DIN rail mounted)
Shipping Weight	0.325 kg (0.715 lbs)
Battery	1747-BA
Programming Cable	1747-CP3 or 1756-CP3
Agency Certification	C-UL certified (under CSA C22.2 No.142) UL 508 listed CE compliant for all applicable directives
Hazardous Environment Class	Class I, Division 2, Hazardous Location, Groups A, B, C, D (UL 1604, C-UL under CSA C22.2 No. 213)
Radiated and Conducted Emissions	EN50081-2 Class A
Electrical /EMC:	*The unit has passed testing at the following levels:*
ESD Immunity (IEC1000-4-2)	4 kV contact, 8 kV air, 4 kV indirect
Radiated Immunity (IEC1000-4-3)	10 V/m, 80 to 1000 MHz, 80% amplitude modulation, +900 MHz keyed carrier
Fast Transient Burst (IEC1000-4-4)	2 kV, 5 kHz
Surge Immunity (IEC1000-4-5)	1 kV galvanic gun
Conducted Immunity (IEC1000-4-6)	10V, 0.15 to 80 MHz[1]

(1)   Conducted Immunity frequency range may be 150 kHz to 30 MHz if the Radiated Immunity frequency range is 30 MHz to 1000 MHz.
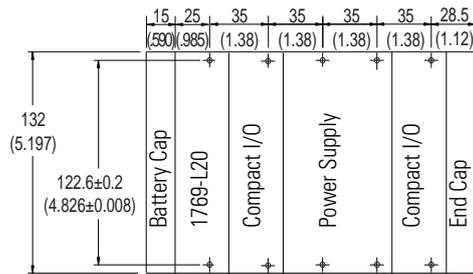
Mounting Dimensions

CompactLogix Controller
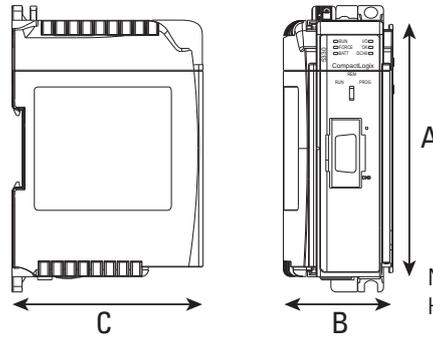
NOTE: All dimensions are in mm (in.).
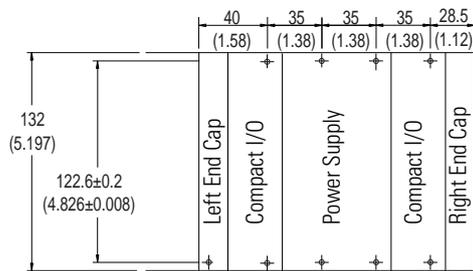Hole spacing tolerance: ±0.4 mm (0.016 in.)

Dimension	1769-L20
Height (A)	118 mm (4.649 in.)
Width (B)	50 mm (1.97 in.)
Depth (C)	87 mm (3.43 in.)

CompactLogix System

NOTE: All dimensions are in mm (in.).
Hole spacing tolerance: ±0.4 mm (0.016 in.)

Compact I/O Expansion Power Supply and End Caps

NOTE: All dimensions are in mm (in.).
Hole spacing tolerance: ±0.4 mm (0.016 in.)

NOTE   Compact I/O expansion cables have the same dimensions as the end caps.

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