

Step 3 - Select:

- processor-based on memory, I/O, speed, communications, and programming requirements
- memory modules
- adapter sockets
- battery assembly

Select an SLC 500 Processor

With SLC 500 Modular Hardware Style controllers, you select the processor, power supply, and I/O modules to fit your application. Modular style chassis are available in 4, 7, 10, and 13-slot versions. See Selecting an SLC 500 Chassis on page 64 for details.



SLC 5/01



SLC 5/02



SLC 5/03



SLC 5/04



SLC 5/05

SLC 5/01

This processor offers a basic set of 51 instructions with the choice of 1K or 4K of memory in a modular hardware configuration. Modular I/O systems that include an SLC 5/01 processor can be configured with a maximum of three chassis (30 total slots) and from 4 I/O points to a maximum of 3940 I/O points.

SLC 5/02

This processor offers additional complex instructions, enhanced communications, faster scan times than the SLC 5/01, and extensive diagnostics that allow it to function in more complex applications. Modular I/O systems can be configured with a maximum of 3 chassis (30 total slots) and from 4 I/O points to a maximum of 4096 I/O points.

SLC 5/03

This processor provides 8 K, 16 K, or 32 K of memory. A built-in RS-232 channel gives you the flexibility to connect to external intelligent devices without the need for additional modules. Modular I/O systems can be configured with a maximum of 3 chassis (30 total slots) and from 4 I/O points to a maximum of 4096 I/O points.

SLC 5/04

The standard DH-485 port has been replaced with a DH+ port, providing high-speed SLC 5/04-to-SLC 5/04 communications and direct connection to PLC-5 controllers. Modular I/O systems can be configured with a maximum of 3 chassis (30 total slots) and from 4 I/O points to a maximum of 4096 I/O points. The available memory options are 16 K, 32 K, or 64 K. In addition, there is an SLC 5/04P option, which is designed

specifically for the Plastics Industry and contains ERC2 algorithms for Plastics Machinery Control.

SLC 5/05

The SLC 5/05 processor provides the same functionality as the SLC 5/04 processor with standard Ethernet communications rather than DH+ communications. Ethernet communication occurs at 10 Mbps or 100 Mbps, providing a high performance network for program upload/download, online editing, and peer-to-peer messaging. Modular I/O systems can be configured with a maximum of 3 chassis (30 total slots) and from 4 I/O points to a maximum of 4096 I/O points.

Controller Specifications

SLC 500 Modular Controllers Specifications

Specification	SLC 5/01		SLC 5/02	SLC 5/03			SLC 5/04			SLC 5/05 ⁽³⁾		
Catalog Number 1747-	L511	L514	L524	L531	L532	L533	L541	L542	L543	L551	L552	L553
Memory Size (Words)	1 K	4 K	4 K	8 K	16 K	32 K	16 K	32 K	64 K	16 K	32 K	64 K
Backplane Current (mA) @ 5V	90 mA			500 mA			1000 mA			1000 mA		
Backplane Current (mA) @ 24V	0 mA			175 mA			200 mA ⁽²⁾			200 mA		
Digital I/O, max	7880		8192									
Local chassis/slots, max.	3/30											
On-board communications	DH-485 Slave		DH-485	DH-485 and RS-232			DH+ and RS-232			Ethernet and RS-232		
Optional memory module	EEPROM			Flash EEPROM								
Programming	RSLogix 500											
Programming Instructions	52		71	107								
Typical Scan Time ⁽¹⁾	8 ms/K		4.8 ms/K	1 ms/K			0.9 ms/K					
Program scan hold-up time after loss of power	20 ms...3 s (dependent on power supply loading)											
Bit Execution (XIC)	4 μs		2.4 μs	0.44 μs			0.37 μs					
Clock/calendar accuracy	N/A			±54 seconds/month @ 25 °C (77 °F) ±81 seconds/month @ 60 °C (140°F)								

(1) The scan times are typical for a 1K ladder logic program consisting of simple ladder logic and communication servicing. Actual scan times depend on your program size, instructions used, and the communication protocol.

(2) SLC 5/04 processors manufactured prior to April 2002 draw 200 mA @ 24V dc. Check the label to verify your processor's current draw.

(3) The 5/05 Series C processors can communicate to 100 Mbps and support increased connections: 1747-L551 = 32 connections; 1747-L552 = 48 connections; 1747-L553 = 64 connections.

Controller Accessories

Memory Modules

These optional memory modules provide non-volatile memory in convenient modular form. The modules plug into a socket on the processor.

Memory Module Specifications

Catalog Number	Description
1747-M1	1 K, EEPROM Memory Module for SLC 5/01 Processors
1747-M2	4 K, EEPROM Memory Module for SLC 5/01 and SLC 5/02 Processors
1747-M13	64 K, Flash EPROM Memory Module for SLC 5/03, SLC 5/04, and SLC 5/05 Series C (or later) OS Firmware only

Adapter Sockets

Adapter sockets are required when using commercial PROM programmers to program and erase memory modules. The memory module fits into the adapter socket, and then the adapter socket fits into the zero insertion force (ZIF) socket on the PROM burner.

Adapter Socket Descriptions

Catalog Number	Description
1747-M5	SLC 5/01 and SLC 5/02 Adapter Socket - Five Sockets Per Package
1747-M15	SLC 5/03, SLC 5/04, and SLC 5/05 Adapter Socket for 1747-M13

Program Storage Device

The 1747-PSD simplifies PLC program development, backup and upgrade shipping issues for SLC 5/03 and higher processors, as well as MicroLogix controllers. The PSD allows you to:

- upload and download to your industrial programming station using RSLogix 500 software.
- back up PLC programs without using a computer or programming software.
- make multiple copies of an installed program.

Before downloading a program, the PSD performs error-checking to ensure that the program is compatible with the target PLC. It also provides automatic baud rate detection, CRC or BCC error detection, and connection via a standard RS-232, 9-pin,

D-shell connector. Stored programs are retained in Flash EPROM memory even if the batteries or the power supply fails.

Program Storage Device Specifications

Attribute	Description
Compatible Controllers	SLC 5/03 and higher, MicroLogix 1000, 1100, 1200, and 1500
Memory Size	64K words maximum
Memory Type	Flash EPROM
Operating Power	(2) AAA batteries, or power supply (7...30V dc, 250 mA max)
Compatible Cables	1747-CP3 and 1761-CBL-PM02 (not included)

Upgrade Kits

SLC 500 OS upgrade kits allow you to access the latest functional enhancements for your existing controller. .

SLC 500 Upgrade Kit Descriptions

Catalog Number	Description
1747-OS302	SLC 5/03 Upgrade Kit – includes 5 upgrade labels
1747-OS401	SLC 5/04 Upgrade Kit – includes 5 upgrade labels
1747-DU501	SLC 5/05 Flash Upgrade Kit – includes CD, instructions, and 5 upgrade labels
1747-RL302	SLC 5/03 Upgrade Kit Labels – includes 10 labels
1747-RL401	SLC 5/04 Upgrade Kit Labels – includes 10 labels
1747-RL501	SLC 5/05 Upgrade Kit Labels – includes 10 labels

1747-BA Lithium Battery Assembly

Backup power for RAM is provided by a replaceable lithium battery. The lithium battery provides backup for approximately five years for the 1747-L511 and two years for the 1747-L514. It provides backup for approximately two years for SLC 5/02, 5/03, 5/04, and SLC 5/05, as well. A battery LED on the processor alerts you when the battery voltage is low.

Power Supply Loading and Heat Dissipation

Use the values in the following tables to calculate the power supply loading for each chassis in your SLC modular application.

Processors

Catalog Number	Backplane Current (mA) @ 5V	Backplane Current (mA) @ 24V	Watts per point	Thermal dissipation, min.	Thermal dissipation, max.
1747-L511	90 mA	0 mA	N/A	1.75 W	1.75 W
1747-L514	90 mA	0 mA	N/A	1.75 W	1.75 W
1747-L524	350 mA	105 mA	N/A	1.75 W	1.75 W
1747-L531	500 mA	175 mA	N/A	1.75 W	1.75 W
1747-L532	500 mA	175 mA	N/A	2.90 W	2.90 W
1747-L533	500 mA	175 mA	N/A	2.90 W	2.90 W
1747-L541	1000 mA	200 mA	N/A	4.00 W	4.00 W
1747-L542	1000 mA	200 mA	N/A	4.00 W	4.00 W
1747-L543	1000 mA	200 mA	N/A	4.00 W	4.00 W
1747-L551	1000 mA	200 mA	N/A	4.00 W	4.00 W
1747-L552	1000 mA	200 mA	N/A	4.00 W	4.00 W
1747-L553	1000 mA	200 mA	N/A	4.00 W	4.00 W

Digital Input Modules

Catalog Number	Backplane Current (mA) @ 5V	Backplane Current (mA) @ 24V	Watts per point	Thermal dissipation, min.	Thermal dissipation, max.
1746-IA4	35 mA	0 mA	0.270 W	0.175 W	1.30 W
1746-IA8	50 mA	0 mA	0.270 W	0.250 W	2.40 W
1746-IA16	85 mA	0 mA	0.270 W	0.425 W	4.80 W
1746-IB8	50 mA	0 mA	0.200 W	0.250 W	1.90 W
1746-IB16	50 mA	0 mA	0.200 W	0.425 W	3.60 W
1746-IB32 ⁽¹⁾	106 mA	0 mA	0.200 W	0.530 W	6.90 W
1746-IC16	50 mA	0 mA	0.220 W	0.425 W	3.95 W
1746-IG16	140 mA	0 mA	0.270 W	0.700 W	1.00 W
1746-IH16	85 mA	0 mA	0.320 W	0.675 W	3.08 W
1746-IM4	35 mA	0 mA	0.350 W	0.175 W	1.60 W
1746-IM8	50 mA	0 mA	0.350 W	0.250 W	3.10 W
1746-IM16	85 mA	0 mA	0.350 W	0.425 W	6.00 W
1746-IN16	85 mA	0 mA	0.350 W	0.425 W	6.00 W
1746-ITB16	50 mA	0 mA	0.200 W	0.425 W	3.625 W