In system mode, the serial port also supports supervisory control and data acquisition (SCADA) applications. SCADA systems allow you to monitor and control remote functions and processes using serial communication links between master and slave locations.

When configured for user mode, the serial port supports ASCII devices. Use the SLC 500 ASCII instructions to send information to and receive information from these devices.

RS-232/DF1 Port Splitters

The 1747 Port Splitters let a single RS-232/DF1 full-duplex communication port on a controller split into two separate ports for simultaneous connection with two external devices. The Port Splitter supports the following: SLC 500, PLC-5, MicroLogix, ControlLogix, CompactLogix, and FlexLogix controllers.

The Port Splitter has three ports for Controller, Network and Programmer/HMI connections. It also has a connection for a +24V external power source and status LEDs.

- The Controller port connects to the RS-232/DF1 full-duplex port of a controller. The port configuration is set at DF1 full-duplex, 8 bits, no parity, 1 stop bit and CRC checksum on powerup. The port automatically sets the baud rate to 19.2 K or 38.4 K baud taking advantage of the controller's maximum baud rate and can also match the controller's CRC or BCC checksum.
- The Network port on the 1747-DPS1 connects to a 1761-NET-AIC, 1761-NET-DNI or 1761-NET-ENI module and receives any messages initiated from the controller. The network port can source power from the port splitter's external power supply to one of the above modules if a 1761-CBL-AM00 or 1761-CBL-HM02 cable is used.
- The Network port on the 1747-DPS2 provides similar functionality, but can be configured for communications with DH-485, DF1 half-duplex (master or slave), DF1 full-duplex, and DF1 radio modem networks. The port is programmed for DH-485 communication at the factory.
- The 1747-DPS2 port splitter has fully-isolated communication ports. Therefore, no external isolation is required.
- The Prog/HMI port connects to a programming station or HMI device (PanelView Standard, PanelView Plus, VersaView CE) for respond only operations.

The serial configuration for the Network and Programmer/HMI ports on the 1747-DPS1 port splitter must be set to DF1 full-duplex, 8 bits, no parity, 1 stop bit, 19.2 K baud and CRC checksum.

The Network port on the 1747-DPS2 port splitter can be configured forwonderduplex, and DF1 radio modem networks.

SLC 500 Programming Instruction Set

The following table shows the SLC 500 instruction set listed within their functional groups.

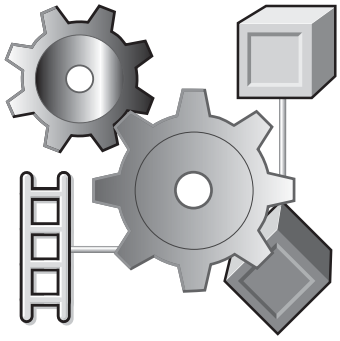
SLC Programming Instruction Set

Functional Group	Description	Instruction(s)	SLC 5/01	SLC 5/02	SLC 5/03	SLC 5/04	SLC 5/05
Bit	monitor and control status of bits	XIC, XIO, OTE, OTL, OTU, OSR	✓	✓	✓	✓	✓
Timer and Counter	control operations based on time or number of events		✓	✓	✓	✓	✓
Compare	compare values using an expression or specific compare instruction	EQU, NEQ, LES, LEQ, GRT, GEQ, MEQ	✓	✓	✓	✓	✓
		LIM		✓	✓	✓	✓
Compute	evaluate arithmetic operations using an expression or specific arithmetic instruction	ADD, SUB, MUL, DIV, DDV, CLR, NEG	✓	✓	✓	✓	✓
		SQR, SCL		✓	✓	✓	✓
		SCP, ABS, CPT, SWP, ASN, ACS, ATN, COS, LN, LOG, SIN, TAN, XPY, RMP			✓	✓	✓
Logical	perform logical operations on bits	AND, OR, XOR, NOT	✓	✓	✓	✓	✓
Conversion	perform conversion between integer and BCD values, and radian and degree values	TOD, FRD, DCD	✓	✓	✓	✓	✓
		DEG, RAD, ENC			✓	✓	✓
Move	move and modify bits	MOV, MVM, RPC	✓	✓	✓	✓	✓
File	perform operations of file data	COP, FLL, BSL, BSR	✓	✓	✓	✓	✓
		FFL, FFU, LFL, LFU, FBC, DDT		✓	✓	✓	✓
Sequencer	monitor consistent and repeatable operations	SQO, SQC	✓	✓	✓	✓	✓
		SQL		✓	✓	✓	✓
Program Control	change the flow of ladder program execution	JMP, LBL, JSR, SBR, RET, MCR, TND, SUS, IIM, IOM, END	✓	✓	✓	✓	✓
		REF		✓	✓	✓	✓
User Interrupt	interrupt your program based on defined events	STD, STE, STS, IID, IIE, RPI, INT		✓	✓	✓	✓
Process Control	close-looped control	PID		✓	✓	✓	✓
Communications	read or write data to another station	MSG, SVC, BTR, BTW, CEM, DEM, EEM (SLC 5/05 only)		✓	✓	✓	✓
ASCII	read, write, compare, convert ASCII strings	ABL, ACB, ACI, ACL, ACN, AEX, AHL, AIC, ARD, ARL, ASC, ASR, AWA, AWT			✓	✓	✓

Step 6 - Select:

- *the appropriate RSLogix 500 package* for your application
- *other software packages, such as RSNetworx for ControlNet or RSNetworx for DeviceNet, if required*

RSLogix 500 Software

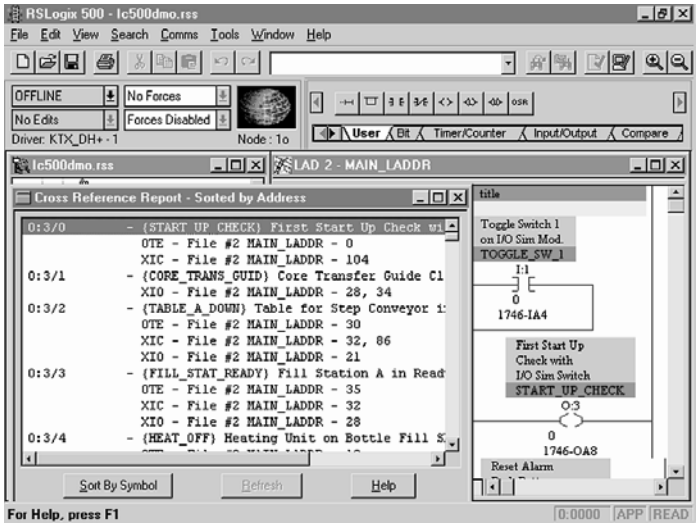


Select Programming Software

Familiar ladder diagram programming makes the SLC 500 family easy to program using a personal computer and RSLogix 500 Programming Software.

The RSLogix 500 ladder logic programming package was the first PLC programming software to offer unbeatable productivity with an industry-leading user interface. RSLogix 500 is compatible with programs created using Rockwell Software's DOSbased programming packages for the SLC 500 and MicroLogix families of processors, making program maintenance across hardware platforms convenient and easy.

RSLogix 500 may be used with Windows 98, Windows NT (4.0), Windows 2000, or Windows XP.



Flexible, Easy-to-use Editing Features

Create application programs without worrying about getting the syntax correct. A Project Verifier builds a list of errors that you can navigate through to make corrections at your convenience.

Powerful online editors allow you to modify your application program while the process is still operating. The Test Edits feature tests the operation of your modification before it becomes a permanent part of the application program. Online and offline editing sessions are limited only by the amount of available RAM.

Drag-and-drop editing lets you quickly move or copy instructions from rung to rung within a project, rungs from one subroutine or project to another, or data table elements from one data file to another.