MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

ALLEN-BRADLEY

1747-L553

SLC 5/05 PROGRAMMABLE CONTROLLER

Used with the applicable Allen Bradley SLC 500 configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Official Allen-Bradley document: 1747-L553.pdf



Allen-Bradley

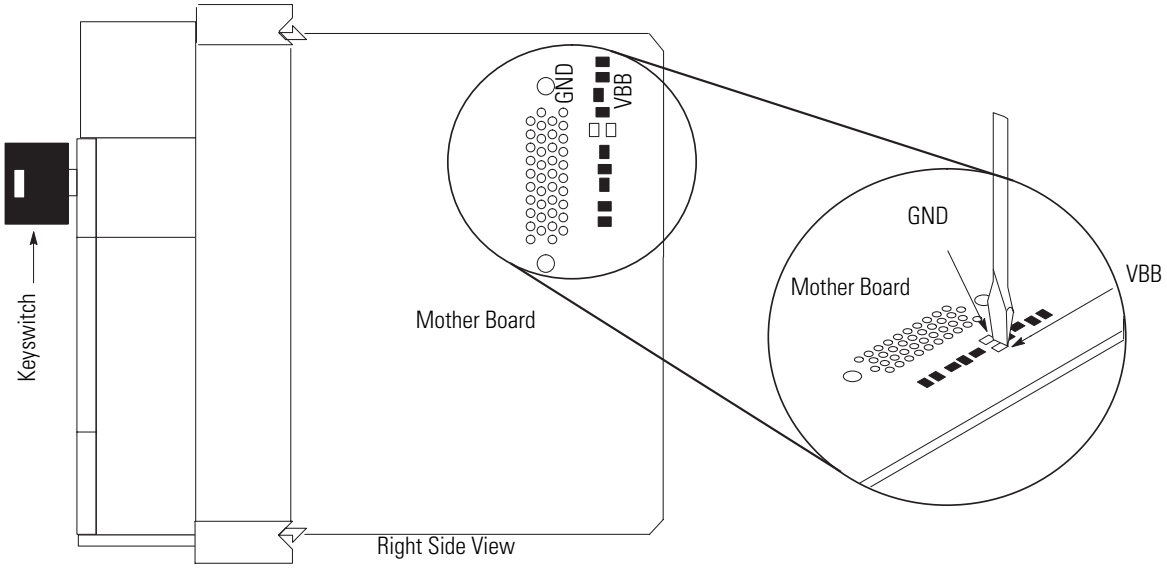
SLC 500 Modular Hardware Style

Catalog Numbers
1747-L511, 1747-L514, 1747-L524, 1747-L531, 1747-L532, 1747-L533, 1747-L541, 1747-L542, 1747-L543, 1747-L551, 1747-L552, 1747-L553

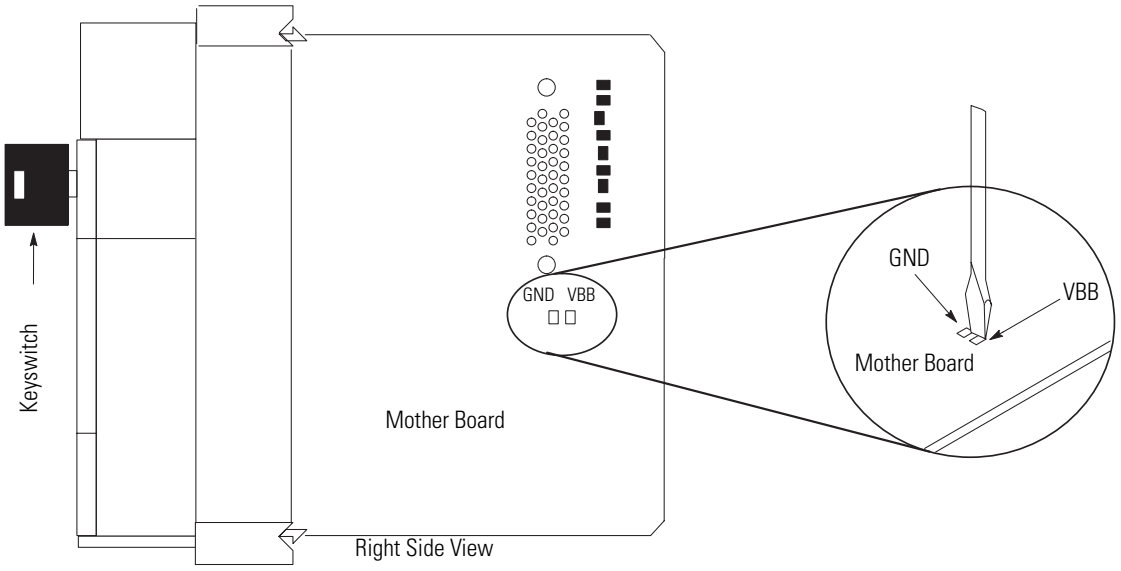
User Manual

Rockwell Automation

SLC 5/03 Processors (1747-L531, 1747-L532, and 1747-L533)



SLC 5/04 Processors (1747-L541, 1747-L542, and 1747-L543)
SLC 5/05 Processors (1747-L551, 1747-L552, and 1747-L553)



programmer. The 1747-M15 Series B adapter socket **is required** for use with the memory module (catalog number 1747-M13).

ATTENTION



Make sure the adapter is inserted properly in the programming equipment or damage could result.

See the table below for details on the Flash EPROM and adapter socket.

Memory Module Compatibility

Cat. No.	Description	Use with this processor type		
		SLC 5/03	SLC 5/04	SLC 5/05
		1747-L531, 1747-L532, 1747-L533	1747-L541, 1747-L542, 1747-L543	1747-L551, 1747-L552, 1747-L553
1747-M13	Supports up to 64 K of user-memory backup	X (Series C OS302 or later)	X (Series C OS401 or later)	X (Series C OS501 or later)

To program a memory module, refer to your programming software user manual or help resource. Follow this procedure to program a memory module.

1. Set the memory module configuration bits (S:1/10 to S:1/12) in your offline program file. Refer to SLC 500 Instruction Set Reference Manual, publication 1747-RM001, for details on the Memory Module Configuration Bits.
2. Download your program file to your processor.
3. Go online with the processor and burn the program to the EEPROM memory module (per the instructions outlined in your programming software user manual or help resource).

EEPROM Burning Options

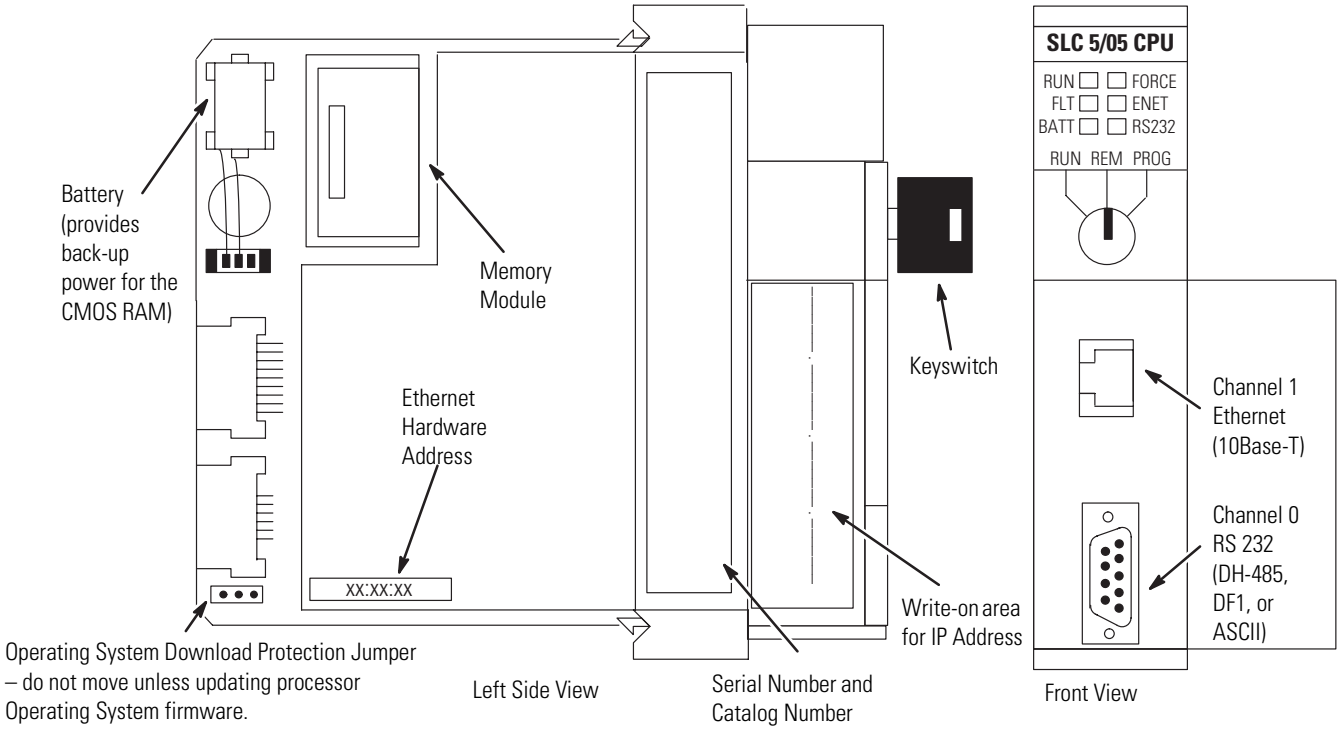
You can burn a program into an EEPROM memory module using a processor that is the same or different from the one used to run the program. When burning EEPROMs, keep the following conditions in mind:

- The processor burning the EEPROM must be of the same type and have the same OS version or lower than the target processor.

- multi-point list.
- UL listed to US and Canadian Safety Standards, CE compliant, C-Tick marked.

The figure below shows some of the hardware components of the SLC 5/05 processors (1747-L551, 1747-L552, and 1747-L553).

SLC 5/05 Hardware Components



The table below provides a general explanation of the processor status indicators.

SLC 5/05 Status Indicators

Processor Status Indicator	When It Is	Indicates that
RUN (Color: green)	On (steady)	The processor is in the Run mode.
	Flashing (during operation)	The processor is transferring a program from RAM to the memory module.
	Off	The processor is in a mode other than Run.
FLT (Color: red)	Flashing (at power up)	The processor has not been configured.
	Flashing (during operation)	The processor detects a major error either in the processor, chassis, or memory.
	On (steady)	A fatal error is present (no communication).
	Off	There are no errors.

Install Your Memory Module

Always turn off power to the controller before removing the processor or inserting or removing the memory module. This guards against possible damage to the module and also undesired processor faults. Memory modules are mounted in carriers or have connectors that are keyed to guard against improper installation.

ATTENTION

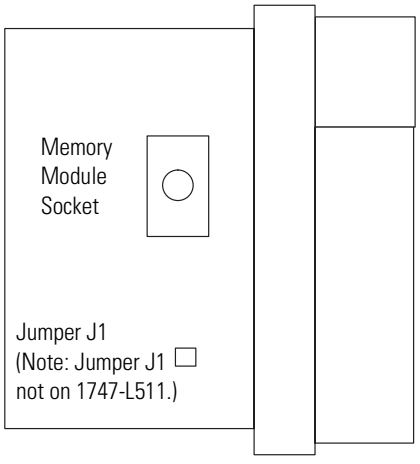


To avoid potential damage to the memory modules, handle them by the ends of the carrier or edges of the plastic housing. Skin oil and dirt can corrode metallic surfaces, inhibiting electrical contact. Also, do not expose memory modules to surfaces or areas that may typically hold an electrostatic charge. Electrostatic charges can alter or destroy memory.

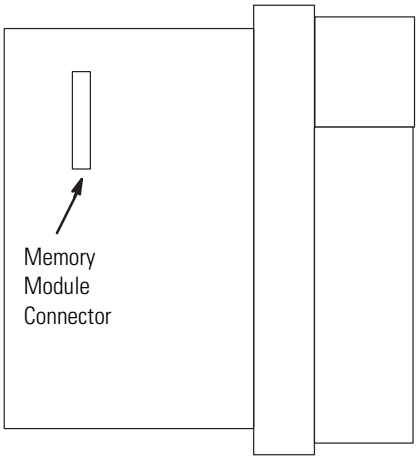
1. If the processor module is installed in the chassis, remove the module by pressing the retainer clips at both the top and bottom of the module and sliding it out.

2. Locate the socket (or connector if you have an SLC 5/03, SLC 5/04, or SLC 5/05 processor) on the processor board. Then place the memory module into the socket or onto the connector and press firmly in place.

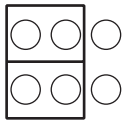
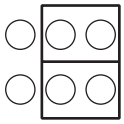
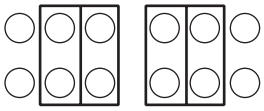
Side View of SLC Processor
1747-L511, 1747 -L514, and 1747-L524



Side View of SLC Processor
1747-L531, 1747-L532, 1747-L533, 1747-L541, 1747-L542, 1747-L543, 1747-L551, 1747-L552, and 1747-L553



3. Place jumper J1 as shown below.

Processor Type	1747-M1, -M2, -M3	1747-M4	Invalid Settings
1747-L514, 1747-L524			
1747-L511, 1747-L531, 1747-L532, 1747-I533, 1747-L541, 1747-L542, 1747-L543, 1747-L551, 1747-L552, 1747-L553	No Jumper J1	No Jumper J1	No Jumper J1

4. Install the processor module into the chassis.

5. Restore power to the controller.

Remove the Memory Module

Follow this procedure to remove the memory module.

1. Remove power and pull out the processor.

2. Grasp the carrier tabs (or connector for the SLC 5/03, SLC 5/04, and SLC 5/05 processor) with your thumb and index fingers, then gently but firmly lift upwards on either end of the memory module carrier.

3. When the end is partially raised, begin lifting the other end in the same manner. Repeat this until the memory module has been completely removed from the socket.

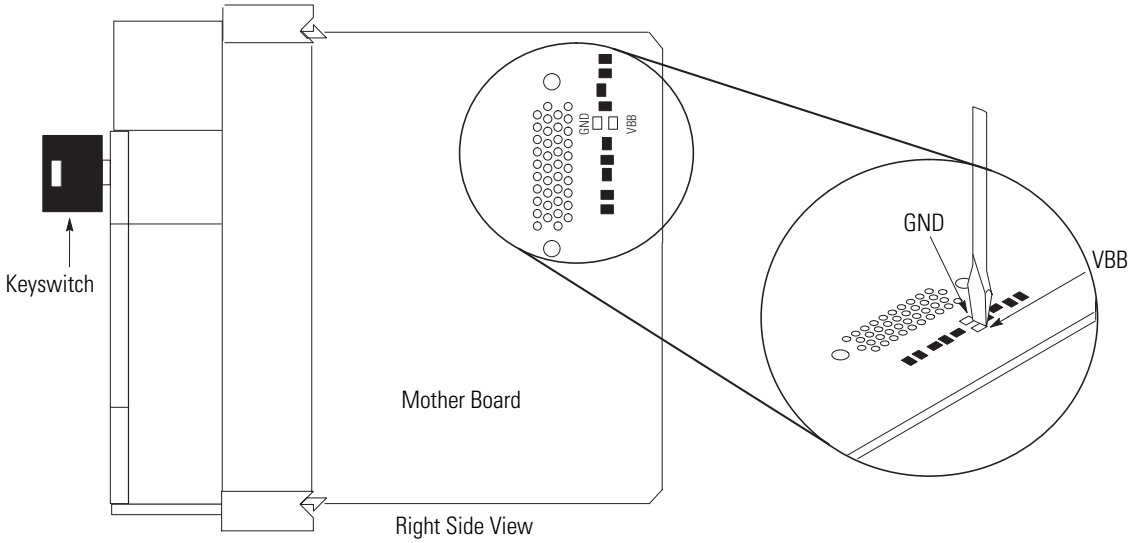
Install Your Power Supply

If you have multiple chassis configurations, install the chassis interconnect cable before installing the power supply.

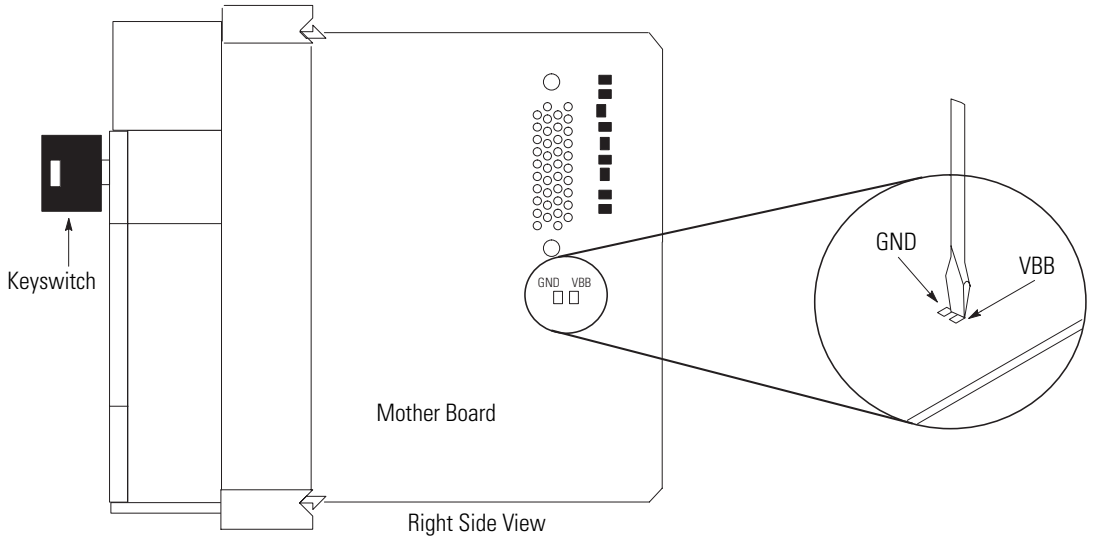
See Install Your Chassis Interconnect Cable on page 108.

Also, the power supply terminals accept two 2 mm^2 (#14 AWG) wires and are marked as shown in the figure on page 106.

SLC 5/03 (1747-L531, 1747-L532 and 1747-L533) Processors



SLC 5/04 (1747-L541, 1747-L542, and 1747-L543)
SLC 5/05 (1747-L551, 1747-L552, and 1747-L553) Processors



Power Supply Worksheet

Power Supply Loading

Use the table below to calculate the power supply loading for each chassis in your SLC modular application.

Hardware Component	Cat. No.	Maximum Current (A)	
		at 5V dc	at 24V dc
Processors	**1747-L511**	0.090	0
	1747-L514	0.090	0
	1747-L524	0.090	0
	1747-L531	0.500	0.175
	1747-L532	0.500	0.175
	1747-L533	0.500	0.175
	1747-L541	1.000	0
	1747-L542	1.000	0
	1747-L543	1.000	0
	1747-L551	1.000	0
	1747-L552	1.000	0
	1747-L553	1.000	0
Digital Input Modules	**1746-IA4**	0.035	-
	1746-IA8	0.050	-
	1746-IA16	0.085	-
	1746-IB8	0.050	-
	1746-IB16	0.050	-
	1746-IB32[1]	0.050	-
	1746-IC16	0.050	-
	1746-IG16	0.140	-
	1746-IH16	0.085	-
	1746-IM4	0.035	-
	1746-IM8	0.050	-
	1746-IM16	0.085	-
	1746-IN16	0.085	-
	1746-ITB16	0.050	-
	1746-ITV16	0.085	-
	1746-IV8	0.050	-
	1746-IV16	0.085	-
	1746-IV32[1]	0.050	-

In order to send an outgoing message, the SLC 5/05 processor must first establish a connection with the destination node at a specified IP address on the Ethernet network. A connection is established when a MSG instruction executes and no previous connection exists.

When a MSG instruction executes, the SLC 5/05 processor checks to see whether a connection has been established with the destination node. If a connection has not been established, the SLC 5/05 processor attempts to establish a connection of the peer type.

In order to receive messages from another device on Ethernet, an incoming connection must be established. This incoming connection is made by the sending processor and uses one incoming connection in the receiving processor.

The SLC 5/05 processor supports a maximum of 32 connections for the 1747-L551 processor, and 48 connections for 1747-L552 and 64 connections for 1747-L553 processor, allowing simultaneous communication with up to 64 other devices or applications.

Connections

Number of Connections[1]	Dedicated to
4	outgoing connections
4	incoming connections
24[2], 40[3], or 56[4]	either incoming or outgoing connections

(1) Connections established by an INTERCHANGE client, RSLinx client, and peers are all included when counting the number of connections.

(2) 1747-L551 processor.

(3) 1747-L552 processor.

(4) 1747-L553 processor.

IMPORTANT For outgoing connections, no more that one connection per destination node is established. If multiple MSG instructions use the same destination node, they share the same connection.

Configuring the Ethernet Channel on the SLC 5/05 Processor

There are two ways to configure the SLC 5/05 Ethernet channel 1. The configuration can be done via a BOOTP/DHCP request at processor powerup, or by manually setting the configuration parameters by using RSLogix 500 programming software. The configuration parameters are shown on page 242.

Power Supply Loading Reference Table

Use the table to calculate the power supply loading and heat dissipation for each chassis in your SLC modular application.

Hardware Component	Cat. No.	Watts per Point	Minimum Watts	Total Watts
Processors	**1747-L511**	NA	1.75	1.75
	1747-L514	NA	1.75	1.75
	1747-L524	NA	1.75	1.75
	1747-L531	NA	2.90	2.90
	1747-L532	NA	2.90	2.90
	1747-L533	NA	2.90	2.90
	1747-L541	NA	4.00	4.00
	1747-L542	NA	4.00	4.00
	1747-L543	NA	4.00	4.00
	1747-L551	NA	4.00	4.00
	1747-L552	NA	4.00	4.00
	1747-L553	NA	4.00	4.00
Digital Input Modules	**1746-IA4**	0.270	0.175	1.30
	1746-IA8	0.270	0.250	2.40
	1746-IA16	0.270	0.425	4.80
	1746-IB8	0.200	0.250	1.90
	1746-IB16	0.200	0.425	3.60
	1746-IB32[(1)]	0.200	0.530	6.90
	1746-IC16	0.220	0.425	3.95
	1746-IG16	0.020	0.700	1.00
	1746-IH16	0.320	0.217	5.17
	1746-IM4	0.350	0.175	1.60
	1746-IM8	0.350	0.250	3.10
	1746-IM16	0.350	0.425	6.00
	1746-IN16	0.350	0.425	6.00
	1746-ITB16	0.200	0.425	3.625
	1746-ITV16	0.200	0.425	3.625
	1746-IV8	0.200	0.250	1.90
	1746-IV16	0.200	0.425	3.60
	1746-IV32[(1)]	0.200	0.530	6.90

Numerics

1746-BAS module 183, 203
1746-C7 cable 108
1746-C9 cable 108
1746-P1 power supply
installing 104
replacing fuse 139
1746-P2 power supply
installing 104
replacing fuse 139
1746-P3 power supply
installing 104
replacing fuse 139
special considerations for grounding 64
1746-P4 power supply
installing 104
1747-AIC link coupler
connecting the communication cable 194
1747-BA, lithium battery 43, 133, 173
1747-KE module
as an RS-232 communication device 203
on the DH-485 network 183
1747-KFC15 module 236
1747-L511 processor 81, 176, 227, 263
1747-L514 processor 81, 176, 227, 263
1747-L524 processor 83, 176, 227, 263
1747-L531 processor 86, 176, 227, 263
1747-L532 processor 86, 176, 227, 263
1747-L533 processor 86, 176, 227, 263
1747-L541 processor 89, 176, 227, 263
1747-L542 processor 89, 176, 227, 263
1747-L543 processor 89, 176, 227, 263
1747-L551 processor 92, 176, 227, 263
1747-L552 processor 92, 176, 227, 263
1747-L553 processor 92, 176, 227, 263
1747-M1 EEPROM 42
1747-M13 44
1747-M2 EEPROM 42
1747-M5 adapter socket 42
1747-NET-DNI interface 265
1747-PIC interface 16, 40, 229, 265
1747-SCNR module 229, 236, 265
1747-SDN module 229, 233, 265
1747-UIC interface 16, 229
description 41, 185
example network 185
function on DH-485 183
Installation Instructions publication 183
1761-NET-AIC interface 40, 229, 265
1761-NET-DNI interface 234, 265
1770-KF3 module 183
1784-KTXD card 226
1784-PCMK card 16
1784-PKTX(D) module 16, 226
1785-KA5 module
on the data highway plus network 226
5/01 processors
general specifications 176
hardware features 81, 101
status indicators 82
troubleshooting 143
5/02 processor
general specifications 176
hardware features 83
installing 101
status indicators 84
troubleshooting 143
5/03 processors
active modem-control lines
CTS (Clear to Send) 210
DCD (Data Carrier Detect) 211
DSR (Data Set Ready) 210
DTR (Data Terminal Ready) 210
RTS (Request to Send) 210
general specifications 176
hardware features 86
installing 101
keyswitch 95
returning processor to initial factory conditions 161
status indicators 87
troubleshooting 149
5/04 processors
active modem-control lines
CTS (Clear to Send) 210
DCD (Data Carrier Detect) 211
DSR (Data Set Ready) 210
DTR (Data Terminal Ready) 210
RTS (Request to Send) 210
general specifications 176
hardware features 89
installing 101
keyswitch 95
returning processor to initial factory conditions 161
status indicators 90
troubleshooting 149
5/05 processors
Ethernet communication 237
general specifications 176
hardware features 92, 93
installing 101
keyswitch 95