Troubleshooting Your SLC Processor

Before troubleshooting your SLC 500 system, please obtain an SLC 500 Modular Hardware Style User Manual, publication 1747-UM011. Refer to the chapter on troubleshooting.

In addition to the SLC 500 Modular Hardware Style User Manual, publication 1747-UM011, the SLC 500 Instruction Set Reference Manual, publication 1747-RM001, contains explanations and examples for the entire instruction set as well as for all status words and bits. It also contains explanations for all possible fault codes found in status word S:6.

Specifications

SLC 5/03, SLC 5/04, and SLC 5/05 Processors

Attribute	SLC 5/03			SLC 5/04			SLC 5/05		
	L531	L532	L533	L541	L542	L543	L551	L552	L553
Memory (words)	8 K	16 K	32 K	16 K	32 K	64 K	16 K	32 K	64 K
I/O capacity, max	4096 discrete inputs/4096 discrete outputs								
Local system, max	3 chassis / 30 slots								
Programming instructions	107								
Typical scan time[1]	1 ms/K			0.9 ms/K					
Bit execution (XIC)	0.44 µs			0.37 µs					
Programming software	SLC 5/03s and SLC 5/04s: RSLogix 500, SLC 5/05s: RSLogix 500								

(1) The scan times are typical for a 1 K 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.

Specifications

Attribute	Value
Power supply loading at 5V dc	500 mA for the SLC 5/03 processor
	1.0 A for the SLC 5/04 and 5/05 processors
Power supply loading at 24V dc	175 mA for the SLC 5/03 processor
	0 mA for the SLC 5/04 processor [1]
	0 mA for the SLC 5/05 processor
Program scan hold-up time after loss of power	20 ms...3 s (dependent on power supply loading)
Noise immunity	NEMA Standard ICS 2-230
Vibration	Displacement: 0.015 in., peak-to-peak at 5-57 Hz
	Acceleration: 2.5 g at 57...2000 Hz
Shock, operating	30 g
Ambient temperature rating, operating	0...60 °C (32...140 °F)
Ambient temperature rating, storage	-40...85 °C (-40...185 °F)
Humidity	5 to 95% without condensation
Agency certification See http://ab.com for declarations of conformity, certificates, and other certification details.	UL Listed Industrial Control Equipment C-UL Listed Industrial Control Equipment for use in Canada UL Listed Industrial Control Equipment for use in Class I, Division 2, Hazardous Locations Groups A, B, C or D CE compliant for all applicable directives C-Tick marked for all applicable acts

[1] SLC 5/04 Processors manufactured prior to April 2002 draw 200 mA at 24V dc. Check your label to verify your processor's current draw.

Communication

Communication options for the SLC 5/03, 5/04, and 5/05 processors are as follows:

- DH485
- RS-232 protocols (DF1 Full-duplex, DF1 Half-duplex master/slave, DF1 Radio Modem, DH-485, or ASCII)
- Data Highway Plus (A ControlLogix Gateway is required for the SLC 5/03 and SLC 5/05 processors.)
- Ethernet TCP/IP (A 1761-NET-ENI interface module is required for the SLC 5/03 and SLC 5/04 processors)
- ControlNet (via a 1747-KFC15 module)
- DeviceNet (via a 1761-NET-DNI interface module)

Memory Backup

The following table shows the memory backup options for the SLC 5/03, 5/04, and 5/05 processors. Flash EPROMs (Flash Erasable Programmable Read Only Memory) combine the versatility of EEPROMs (Electrically-Erasable Programmable Read Only Memory) with the security of UVPROMs (UV-Erasable PROM).

Memory Backup Option	SLC 5/03 Processor (1747-L531, 1747-L532, 1747-L533)	SLC 5/04 Processor (1747-L541, 1747-542, 1747-543)	SLC 5/05 Processor (1747-L551, 1747-552, 1747-553)
Flash EPROM	1747-M13 (OS302 Series C or later)	1747-M13 (OS401 Series C or later)	1747-M13 (OS501 Series C or later)

Battery Handling, Storing, and Transporting (Cat. No. 1747-BA)

Handling

ATTENTION

Do not charge the batteries. An explosion could result or the cells could overheat causing burns. Do not open, puncture, crush, or otherwise mutilate the batteries. An explosion may result and/or toxic, corrosive, and flammable liquids would be exposed.

Storing

Store the lithium batteries in a cool, dry environment, typically 20...25 °C (68...77 °F) and 40% to 60% relative humidity.

Transporting

One or Two Batteries - Up to two batteries can be shipped together within the United States without restriction. Regulations governing shipment to or within other countries may differ.

Three or More Batteries - Procedures for the transportation of three or more batteries shipped together within the United States are specified by the Department of Transportation (DOT) in the Code of Federal Regulations, CFR49, “Transportation.”

An exemption to these regulations, DOT - E7052, covers the transport of certain hazardous materials classified as flammable solids. This exemption authorizes transport of lithium batteries by motor vehicle, rail freight, cargo vessel, and cargo-only aircraft, providing certain conditions are met. Transport by passenger aircraft is not permitted.

Shipment of depleted batteries for disposal may be subject to specific regulation of the countries involved or to regulations endorsed by those countries, such as the IATA Restricted Articles Regulations of the International Air Transport Association, Geneva, Switzerland.

IMPORTANT Regulations for transportation of lithium batteries are periodically revised. Refer to http://www.dot.gov for the latest shipping information.

ATTENTION

Do not incinerate or dispose of lithium batteries in general trash collection. Explosion or violent rupture is possible. Batteries should be collected for disposal in a manner to prevent against short circuiting, compacting, or destruction of case integrity and hermetic seal.

For disposal, batteries must be packaged and shipped in accordance with transportation regulations, to a proper disposal site. The U.S. Department of Transportation authorizes shipment of "Lithium batteries for disposal" by motor vehicle only in regulation 173.1015 of CFR 49 (effective January 5, 1983). For additional information contact:

U.S. Department of Transportation
Research and Special Programs Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

Although the Environmental Protection Agency at this time has no regulations specific to lithium batteries, the material contained may be considered toxic, reactive, or corrosive. The person disposing of the material is responsible for any hazard created in doing so. State and local regulations may exist regarding the disposal of these materials.

For a lithium battery material safety data sheet, contact the manufacturer.

Sanyo Energy Corporation
600 Supreme Drive
Bensenville, IL 60106
USA

or

Tadarand U.S. Battery Division
2 Seaview Blvd.
Port Washington, NY 11050
USA

Additional Resources

Resource	Description
SLC 500 Modular Hardware Style User Manual, publication 1747-UM011	A more detailed description on how to install and use your modular SLC 500 system.
SLC 500 Instruction Set Reference Manual, publication 1747-RM001	A reference manual that contains status file data, instruction set, and troubleshooting information.

You can view or download publications at http://literature.rockwellautomation.com. To order paper copies of technical documentation, contact your local Rockwell Automation distributor or sales representative.