ControlLogix 5570 and 5560 Controllers

Catalog Numbers 1756-L71, 1756-L72, 1756-L73, 1756-L73XT, 1756-L74, 1756-L75, 1756-L72EROM, 1756-L73EROM, 1756-L61, 1756-L62, 1756-L63, 1756-L63XT, 1756-L64, 1756-L65

Allen-Bradley
by ROCKWELL AUTOMATION

User Manual

Original Instructions

For detailed information about GuardLogix and Armor GuardLogix safety controllers, see the following publications.

Resource	Description
GuardLogix 5570 Controllers User Manual, publication 1756-UM022	Provides information on how to install, configure, and operate GuardLogix 5570 controllers in Studio 5000® projects, version 21 or later.
GuardLogix 5570 and Compact GuardLogix 5370 Controller Systems Reference Manual, publication 1756-RM099	Provides information on how to meet safety application requirements for GuardLogix 5570 controllers in Studio 5000 projects, version 21 or later.
GuardLogix Controllers User Manual, publication 1756-UM020	Provides information on how to install, configure, and operate GuardLogix 5560 and GuardLogix 5570 controllers in RSLogix 5000® projects, version 20 or earlier.
GuardLogix Controller Systems Safety Reference Manual, publication 1756-RM093	Provides information on how to meet safety application requirements for GuardLogix 5560 and GuardLogix 5570 controllers in RSLogix 5000 projects, version 20 or earlier.
GuardLogix Safety Application Instruction Set Safety Reference Manual, publication 1756-RM095	Provides programmers with details about the GuardLogix safety application instruction set.

Standard ControlLogix Controllers

The following table describes ControlLogix 5560 and 5570 catalog numbers.

Table 1 - ControlLogix Catalog Numbers

Controller Family	Cat. No.
ControlLogix 5560	1756-L61, 1756-L62,1756-L63, 1756-L64,1756-L65
ControlLogix 5570	1756-L71, 1756-L72, 1756-L73,1756-L74, 1756-L75

The standard ControlLogix controllers share many similar features, but also have some differences. The following table provides an overview of the differences between the controllers. For further details about these features and differences, see the appropriate chapters of this manual.

Table 2 - Differences between ControlLogix 5570 and 5560 Controllers

Feature	ControlLogix 5570	ControlLogix 5560
Clock support and backup for memory retention at powerdown	Energy Storage Module (ESM)	Battery
Communication ports (built-in)	USB	Serial
Connections, controller	500	250
Memory, nonvolatile	Secure Digital (SD) card	CompactFlash card
Status display and status indicators	Scrolling status display and four status indicators	Six status indicators
Unconnected buffer defaults	20 (40, max)	10 (40, max)

For information on using ControlLogix controllers in SIL 2 applications, see the ControlLogix SIL 2 Applications Safety Reference Manual, publication 1756-RM001.

Determine Required Controller Firmware

IMPORTANT The controller must be in Remote Program or Program mode and all major recoverable faults must be cleared to accept upgrades.

Use Table 6 to determine what firmware revision is required for your controller.

Table 6 - Firmware Required for Controllers

Controller	Series	Use this firmware revision
1756-L61	A	12.*x* or later
	B	13.40 or later
1756-L62	A	12.*x* or later
	B	13.40 or later
1756-L63	A	• If not using a CompactFlash card, 10.*x* or later • If using a CompactFlash card, 11.*x* or later
	B	13.40 or later
1756-L63XT	B	13.40 or later
1756-L64	B	16 or later
1756-L65	B	17 or later
1756-L71	A	20 or later
1756-L72	A	19 or later
1756-L72EROM	A	19 or later
1756-L73	A	19 or later
1756-L73XT	A	19 or later
1756-L73EROM	A	19 or later
1756-L74	A	19 or later
1756-L75	A	19 or later

Estimate the ESM Support of the WallClockTime

The ESM provides support for the maintenance of the WallClockTime of the controller when power is not applied. Use this table to estimate the hold-up time of the ESM based on the temperature of the controller and installed ESM.

Temperature	Hold-up Time (in days)		
	1756-ESMCAP	1756-ESMNRM	1756-ESMNSE
20 °C (68 °F)	12	12	0
40 °C (104 °F)	10	10	0
60 °C (140 °F)	7	7	0

IMPORTANT Any action that causes the 1756-L7*x* controller to reset (hard or soft), without an ESM installed, results in the WallClockTime of the controller being reset to the factory default of 01/01/1998.

To check the status of the ESM, see General Status Messages on page 174.

Maintain the Battery (Only 1756-L6*x* Controllers)

This section explains how to monitor and maintain the lithium batteries that the ControlLogix controllers support.

Table 8 - 1756-L6*x* Controllers and Compatible Batteries

Cat. No.	Series	Compatible Battery
1756-L61 1756-L62 1756-L63	A	1756-BA1 **or** 1756-BATA **or** 1756-BATM
1756-L61 1756-L62 1756-L63 1756-L64 1756-L65	B	1756-BA2
1756-L63XT	B	

For further information, see the Additional Resources section in the preface.

ControlLogix Controller Features

The ControlLogix controllers are part of the Logix 5000® family of controllers that are offered by Rockwell Automation. The sections that follow describe the differentiating features of the ControlLogix controllers.

System, Communication, and Programming Features

Table 12 lists the system, communication, and programming features available with ControlLogix controllers.

Table 12 - ControlLogix Controller Features

Feature	1756-L61, 1756-L62, 1756-L63, 1756-L64, 1756-L65	1756-L71, 1756-L72, 1756-L73, 1756-L74, 1756-L75	1756-L72EROM, 1756-L73EROM
Controller tasks	• 32 tasks • 100 programs/task • Event tasks: all event triggers	• 32 tasks • 1000 programs/task starting in Logix Designer application version 24 and later • 100 programs/task starting in Logix Designer application version 15 • 32 programs/task prior to Logix Designer application version 15 • Event tasks: all event triggers	
Communication ports	1 port - RS-232 serial	1 port - USB, 2.0 full-speed, Type B	
Communication options	• EtherNet/IP • ControlNet® • DeviceNet • Data Highway Plus™ • Remote I/O • SynchLink™ • Third-party process and device networks		EtherNet/IP
Serial port communication	• ASCII • DF1 full/half-duplex • DF1 radio modem • DH-485 • Modbus via logic	N/A	
Controller connections supported, max	250	500	
Network connections, per network module	• 128 ControlNet (1756-CN2/B) • 100 ControlNet (1756-CN2/A) • 40 ControlNet (1756-CNB) • 256 EtherNet/IP; 128 TCP (1756-EN2x) • 128 EtherNet/IP; 64 TCP (1756-ENBT)		256 EtherNet/IP; 128 TCP (1756-EN2x)
Controller redundancy	Full support except for motion applications		
Integrated motion	• Integrated Motion on the EtherNet/IP network • Sercos interface • Analog options: – Encoder input – LDT input – SSI input		
Programming languages	• Relay ladder • Structured text • Function block • Sequential function chart (SFC)		