

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

ALLEN-BRADLEY CONTROLLOGIX

1756-L72

CONTROLLOGIX 5570 CONTROLLER

Used with the applicable ControlLogix 5570 controllers configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Allen-Bradley official manufacturer documentation

ControlLogix 5570 Standard and Conformal Coated Controllers

Features - ControlLogix 5570 Standard and Conformal Coated Controllers

Feature	1756-L71, 1756-L71K, 1756-L72, 1756-L72K, 1756-L73, 1756-L73K, 1756-L74, 1756-L74K, 1756-L75, 1756-L75K
Controller tasks	• 32 tasks, including a combination of one continuous, periodic, and event tasks • 32 programs/tasks prior to RSLogix 5000® programming software, version 15.01.00 • 100 programs/task beginning with RSLogix 5000 programming software, version 15.01.00 • 1000 programs/task beginning with Logix Designer application, version 24.00.00
Built-in communication ports	1-port USB ⁽¹⁾
Communication options	• EtherNet/IP • ControlNet • DeviceNet • Data Highway Plus • Remote I/O • SERCOS • Third-party process and device networks
USB port communication	Programming, configuration, firmware update, and online edits only
Controller connections supported max ⁽²⁾	500
Network connections, per network module	• 1000 I/O; 528 EtherNet/IP; 512 TCP (1756-EN4TR) • 256 EtherNet/IP; 128 TCP (1756-EN2x) • 128 EtherNet/IP; 64 TCP (1756-ENBT) • 100 ControlNet (1756-CN2/A) • 40 ControlNet (1756-CNB/D, 1756-CNB/E) • 128 ControlNet (1756-CN2/B)
Controller redundancy	Full support
Integrated motion	• SERCOS interface • Analog options (encoder input, LDT input, SSI input) • Integrated Motion on the EtherNet/IP network
Programming languages	• Relay ladder logic • Structured text • Function Block Diagram • Sequential function chart (SFC)

(1) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.

(2) ControlLogix 5570 controllers use connections to establish communication links between devices. For more information on how to use and calculate connections, see the ControlLogix System User Manual, publication [1756-UM001](#).

Technical Specifications - ControlLogix 5570 Standard and Conformal Coated Controllers

Attribute	1756-L71, 1756-L71K	1756-L72, 1756-L72K	1756-L73, 1756-L73K	1756-L74, 1756-L74K	1756-L75, 1756-L75K
User memory	2 MB	4 MB	8 MB	16 MB	32 MB
I/O memory	0.98 MB				
Nonvolatile memory storage	1 GB Secure Digital (SD) card (1784-SD1), ships pre-installed in the controller ⁽¹⁾				
Digital I/O max	128,000				
Analog I/O max	4000				
Total I/O max	128,000				
Energy storage module	1756-ESMCAP, 1756-ESMCAPK capacitor energy storage module (removable, ships installed with every controller) 1756-ESMNSE, 1756-ESMNSEK capacitor energy storage module (removable, no residual WallClockTime power backup) 1756-ESMNRM, 1756-ESMNRMK capacitor energy storage module (non-removable, helps prevent USB connection and SD card use to help secure the controller)				
Current draw @ 1.2V DC	5 mA				
Current draw @ 5.1V DC	800 mA				
Power dissipation	2.5 W				
Thermal dissipation	8.5 BTU/hr				
Isolation voltage	30V (continuous), basic insulation type, USB port-to-system Compliant and tested according to IEC/UL 61010-1				
USB port ⁽²⁾	USB 2.0, full speed (12 Mbps)				
Weight approx	0.25 kg (0.55 lb)				
Slot width	1				
Module location	Chassis-based, any slot				
Chassis	1756-A4, 1756-A4K, 1756-A7, 1756-A7K, 1756-A10, 1756-A10K, 1756-A13, 1756-A13K, 1756-A17, 1756-A17K				
Power supply, standard	1756-PA50, 1756-PA50K, 1756-PA72, 1756-PA72K, 1756-PA75, 1756-PA75K, 1756-PB50, 1756-PB50K 1756-PB72, 1756-PB72K, 1756-PB75, 1756-PB75K, 1756-PC75, 1756-PH75				
Power supply, redundant	1756-PA75R, 1756-PA75RK, 1756-PB75R, 1756-PB75RK, 1756-PSCA2, 1756-PSCA2K				
Wire category ⁽³⁾	3 - on USB port				
Temperature code	T4				
Enclosure type rating	None (open-style)				

(1) Larger versions may be available. See [Memory Cards on page 61](#).

(2) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.

(3) Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

GuardLogix 5570 Standard and Conformal Coated Controllers

Features - GuardLogix 5570 Controllers

Feature	1756-L71S, 1756-L71SK, 1756-L72S, 1756-L72SK, 1756-L73S, 1756-L73SK	1756-L7SP, 1756-L7SPK
Safety communication options	Standard and safety - EtherNet/IP - ControlNet - DeviceNet	—
Network connections per network module located in the local chassis	1000 I/O; 528 EtherNet/IP; 512 TCP (1756-EN4TR) 256 EtherNet/IP; 128 TCP (1756-EN2x) 128 EtherNet/IP; 64 TCP (1756-ENBT) 128 ControlNet (1756-CN2/B) 100 ControlNet (1756-CN2/A) 40 ControlNet (1756-CNB/D, 1756-CNB/E)	—
Programming languages	- For the safety task, GuardLogix controllers support Ladder Diagram only. - For standard tasks, GuardLogix controllers support: - Ladder Diagram (LD) - Structured Text (ST) - Function Block Diagram (FBD) - Sequential Function Chart (SFC)	—

Technical Specifications - GuardLogix 5570 Controllers

Attribute	1756-L71S, 1756-L71SK	1756-L72S, 1756-L72SK	1756-L73S, 1756-L73SK	1756-L7SP, 1756-L7SPK
User memory	2 MB	4 MB	8 MB	—
Safety memory	1 MB	2 MB	4 MB	Configured to match primary controller
I/O memory	0.98 MB			—
Nonvolatile memory storage	1 GB Secure Digital (SD) card (1784-SD1), ships pre-installed in the controller ⁽¹⁾			—
Digital I/O, max	128,000			—
Analog I/O, max	4000			—
Total I/O, max	128,000			—
Replacement battery	—			—
Energy storage modules	1756-ESMCAP capacitor energy storage module (removable, ships installed with every controller) 1756-ESMNSE capacitor energy storage module (removable, no residual WallClockTime power backup) 1756-ESMNRM capacitor energy storage module (non-removable, helps prevent USB connection and SD card use to help secure the controller)			1756-SPESMNSE capacitor energy storage module for the safety partner (removable, no residual WallClockTime power backup) 1756-SPESMNRM capacitor energy storage module for the safety partner (non-removable, helps prevent USB connection and SD card use to help secure the controller)
Current draw @ 1.2V DC	5 mA			—
Current draw @ 5.1V DC	800 mA			—
Power dissipation	2.5 W			—
Thermal dissipation	8.5 BTU/hr			—
Isolation voltage	30V (continuous), basic insulation, USB port-to-system Compliant and tested according to IEC/UL 61010-1			—
Weight, approx	0.25 kg (0.55 lb)			—
Slot width	2 (both modules needed; each is one slot)			—
Module location	Chassis-based, any slot			Chassis slot immediately to the right of the primary controller
Chassis	1756-A4, 1756-A4K, 1756-A7, 1756-A7K, 1756-A10, 1756-A10K, 1756-A13, 1756-A13K, 1756-A17, 1756-A17K			—
Power supply, standard	1756-PA50, 1756-PA50K, 1756-PA72, 1756-PA72K, 1756-PA75, 1756-PA75K, 1756-PB50, 1756-PB50K 1756-PB72, 1756-PB72K, 1756-PB75, 1756-PB75K, 1756-PC75, 1756-PH75			—
Power supply, redundant	1756-PA75R, 1756-PA75RK, 1756-PB75R, 1756-PB75RK, 1756-PSCA2, 1756-PSCA2K			—
Wire category ⁽²⁾	3 - on USB ports			—
Temperature code	T4			—
Enclosure type rating	None (open-style)			—

(1) Larger versions may be available. See [Memory Cards on page 72](#).

(2) Use this Conductor Category information to plan conductor routing. See Industrial Wiring and Grounding Guidelines, publication [1770-4.1](#).

Armor ControlLogix and Armor GuardLogix 5570 Controllers

The 1756 Armor ControlLogix and Armor GuardLogix 5570 controllers extend the ControlLogix platform to the On-Machine™ space to put industrial control closer to the application, and sometimes onto the machine itself.

The Armor GuardLogix controllers are certified for use in safety applications up to Safety Integrity Level (SIL) 3 and Performance Level PLe (Category 4), where the de-energized state is the safe state.

Dual independent EtherNet/IP ports and Device Level Ring (DLR) capabilities provide resiliency from loss of network connections due to one connection failure.

The controllers support the same environmental ratings and global certifications as the ControlLogix and GuardLogix controllers, but now provide Ingress Protection (IP67 and UL Type 4/4x) for dust and washdown protection.

With so many hardware functions in one device, these controllers minimize cabinet hardware and simplify wiring layouts. The controllers do not require specialty tools or specialty personnel for component replacement. These features can help improve MTTR (MTTR), simplify troubleshooting, and make system status readily available without having to open a cabinet or visit a control room.

Armor ControlLogix 5570 Controller



Armor GuardLogix 5570 Controller



Features - Armor ControlLogix and Armor GuardLogix 5570 Controllers

Feature	1756-L72ER0M, 1756-L73ER0M	1756-L72ER0MS, 1756-L73ER0MS
Communication options	Standard on EtherNet/IP networks	Standard and safety on EtherNet/IP networks
Network connections	512 EtherNet/IP and 256 TCP connections ⁽¹⁾	
Controller redundancy	Not supported	
Programming languages	- Relay Ladder Logic (RLL) - Structured Text - Function Block Diagram - Sequential Function Chart (SFC)	- Relay Ladder Logic (RLL) - Structured Text - Function Block Diagram - Sequential Function Chart (SFC) - Safety Task supports only RLL and the additional safety application instructions

(1) Based on an enclosure with two 1756-EN3TR modules, which each support 256 EtherNet/IP and 128 TCP connections.

Technical Specifications - Armor ControlLogix and Armor GuardLogix 5570 Controllers

Attribute	1756-L72EROM	1756-L72EROMS	1756-L73EROM	1756-L73EROMS
Standard memory	4 MB	4 MB	8 MB	8 MB
Safety memory	—	2 MB	—	4 MB
I/O memory	0.98 MB			
Nonvolatile memory storage	1 GB Secure Digital Card (1784-SD1), ships pre-installed in the controller ⁽¹⁾			
Digital I/O, max	128,000			
Analog I/O, max	4000			
Total I/O, max	128,000			
Input voltage range	18...32V DC			
Input voltage, nom	24V DC			
Input system power, pins 2 and 3	18...32V DC @ 8 A			
Input pass through power, pins 1 and 4	SELV 18...32V DC @ 8 A			
Output external power, pins 2 and 3	18...32V DC @ 6 A			
Output pass through power, pins 1 and 4	SELV 18...32V DC @ 8 A			
Fusing	Non-replaceable fuse is soldered in place ⁽²⁾			
Isolation voltage	30V (continuous), Basic Insulation Type, Power to enclosure, Ethernet channels to Power, and non-redundant Ethernet channels to non-redundant Ethernet channels. No isolation between redundant Ethernet channels Compliant and tested according to IEC/UL 61010-1			
Weight, approx	7.04 kg (15.50 lb)	7.15 kg (15.725 lb)	7.04 kg (15.50 lb)	7.15 kg (15.725 lb)
Dimensions	240.0 x 292.0 x 164.52 mm (9.4 x 11.5 x 6.5 in.)			
Ethernet ports	4 Ethernet M12 Category 5E			
Ethernet cable	802.3 compliant shielded or unshielded twisted-pair			
USB port ⁽³⁾	USB 1.1, full speed (12 Mbps)			
Wire Size	PE Ground: 1.3...5.2 mm ² (16...0 AWG)			
Terminal block torque specifications	PE Ground: 2 N•m (17.7 lb•in)			
Wire category ⁽⁴⁾	3 - on USB ports 2 - on power ports 2 - on Ethernet ports			
Enclosure type rating	UL Type 4/4x Meets IP67 (when marked) with receptacle dust caps or cable termination			

(1) Larger versions may be available. See [Memory Cards on page 84](#).

(2) This fuse is intended to guard against fire hazard due to short circuit conditions.

(3) The USB port is intended for temporary local programming purposes only and not intended for permanent connection.

(4) Use this Conductor Category information to plan conductor routing. See Industrial Wiring and Grounding Guidelines, publication [1770-4.1](#).