

GuardLogix 5570 Controllers

A 1756 GuardLogix controller can perform safety functions. You must use a primary safety controller and a safety partner to achieve up to SIL CL 3/PLe/Cat. 4. A benefit of this system is that it is still one project, safety and standard together. The safety partner is a part of the system, is automatically configured, and requires no user setup.

During development, safety and standard have the same rules. Multiple programmers, online editing, and forcing are allowed. Once the safety system is validated and the safety signature is applied, safety memory is protected, the safety logic cannot be modified, and all safety functions operate with SIL integrity. If the safety partner is present, the safety integrity is SIL 3. If no safety partner is present, the safety integrity is SIL 2.

All standard GuardLogix controller functions operate like a regular Logix controller. Online editing, forcing, and other activities are allowed.

With this level of integration, safety memory can be read by standard logic and external devices, like HMIs or other controllers, minimizing the need to condition safety memory for use elsewhere. The result is system-wide integration and the ability to display safety status on displays or marquees. For field device connectivity on EtherNet/IP or DeviceNet networks, use Guard I/O™ modules. For safety interlocking between GuardLogix controllers, use EtherNet/IP or ControlNet networks. Multiple GuardLogix controllers can share safety data for zone to zone interlocking, or one GuardLogix controller can use remote distributed safety I/O between different cells/areas.

GuardLogix 5570 controllers with a 'K' or 'XT' in the catalog number have a conformal coating that adds a degree of protection against harsh, corrosive gas environments.

GuardLogix 5570 Controller with Safety Partner



ATTENTION: Select products that are rated for corrosive atmospheres ship with port plugs, covers, or memory cards installed which provide connectors with a degree of protection in corrosive gas environments. Once the factory packaging seal is broken, plugs or covers must be installed in all unoccupied ports or slots for the product to maintain its corrosive atmosphere rating.

If temporary access is required, port plugs, covers, memory cards, and so on can be removed from ports or slots, but should be reinstalled after temporary access is complete.

IMPORTANT

When a GuardLogix product that is rated for harsh environments (corrosive atmosphere, extended temperature, etc.) is used in a system with other ControlLogix products that have lower specification values, the system is derated to the lowest common value.

EXAMPLE: If the maximum operating temperature specification found in the Technical Data for your GuardLogix-XT module is 70 °C (158 °F) and you pair it with a ControlLogix chassis that is temperature rated to 60 °C (140 °F), your system is derated to 60 °C (140 °F).

To ensure that your system is equipped for harsh environments, compare the corrosive atmosphere, temperature, and other specifications found in the Technical Data publication for each product.

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-ESMNRN 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-SPESMNRN 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](#).

Environmental Specifications - GuardLogix 5570 Controllers

Attribute	1756-L71S, 1756-L72S, 1756-L73S, 1756-L7SP	1756-L71SK, 1756-L72SK, 1756-L73SK, 1756-L7SPK
Temperature, operating IEC 60068-2-1 (Test Ae, Operating Cold), IEC 60068-2-2 (Test Be, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0 °C ≤ Ta ≤ +60 °C (+32 °F ≤ Ta ≤ +140 °F)	
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)	
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing	
Conformal coated	No	Yes
Corrosive Atmosphere ASTM B845-97 Method H Accelerated Test (20-Day Exposure)	—	Severity Level G3 ⁽¹⁾ per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX ⁽¹⁾⁽²⁾ per IEC 60721-3-3:2019, Chemically Active Substances
Vibration	IEC 60068-2-6 (Test Fc, Operating)	
Shock, operating	IEC 60068-2-27 (Test Ea, Unpackaged Shock)	
Shock, nonoperating	IEC 60068-2-27 (Test Ea, Unpackaged Shock)	
Emissions	IEC 61000-6-4	
ESD immunity	IEC 61000-4-2	
Radiated RF immunity	IEC 61000-4-3	
Conducted RF Immunity	IEC 61000-4-6 (Not applicable: USB is a temporary programming port.)	

(1) Once the factory packaging seal is broken, plugs or covers must be installed in all unoccupied ports or slots for the product to maintain its corrosive atmosphere rating.

(2) Up to 9.6 microns per year, corrosion rate of copper.

Certifications - GuardLogix 5570 Controllers

Certification⁽¹⁾	1756-L71S, 1756-L72S, 1756-L73S, 1756-L7SP 1756-L71SK, 1756-L72SK, 1756-L73SK, 1756-L7SPK
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2006/42/EC MD, compliant with: • EN 60204-1; Electrical equipment of machines • EN ISO 13849-1; Safety-related parts of control systems • EN 62061; Functional safety of safety-related control systems
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEX	IECEX System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEX UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091 - Electromagnetic Compatibility Regulations • 2016 No. 1107 - Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032 - Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations • 2008 No. 1597 - Supply of Machinery (Safety) Regulations
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of Radio Waves Act, Clause 3
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products
TÜV certified for functional safety ⁽²⁾	Capable of SIL CL 3 according to IEC 61508, capable of Category 4 according to EN954-1, and capable of PLe according to ISO 13849-1 when used as described in the GuardLogix 5570 and Compact GuardLogix 5370 Controller Systems Safety Reference Manual, publication 1756-RM099 .
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements

(1) When marked. See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

(2) When used with specified firmware revisions. See the Product Safety Certificate at the Product Certification website (rok.auto/certifications) for a full list of safety-related certifications.

GuardLogix 5570 Controller Accessories

You can use these accessories with GuardLogix 5570 controllers.

Memory Cards

Memory cards offer nonvolatile memory to store a user program and tag data on a controller.

The GuardLogix 5570 controllers come with the 1784-SD2 Secure Digital (SD) card installed and support optional 1784-SD1 cards purchased separately.

Attribute	1784-SD1	1784-SD2
Type	Secure Digital (SD) card	
Memory	1 GB	2 GB
Supported controllers	1756-L71S, 1756-L71SK 1756-L72S, 1756-L72SK 1756-L73S, 1756-L73SK, 1756-L73SXT	
Weight, approx	1.76 g (0.06 oz)	

Ethernet and USB Port Protection Plugs

GuardLogix 5570 controllers with a 'K' or 'XT' in the catalog number are shipped with port protection plugs installed to provide a degree of protection from corrosive atmospheres.

You can order replacement plugs directly from the distributor.

Rockwell Automation Part Number	Description	Supplier	Supplier Part Number
PN-579024	Plug for Ethernet Port	Würth Elektronik	726154101
PN-579028	Plug for USB Port	Essentra Components	CP-USB-B-429 ⁽¹⁾

(1) The USB port plug must be part number **CP-USB-B-429** (material: Ethylene Propylene Diene Monomer). Do not order part number CP-USB-B, as it is made of silicone rubber.

GuardLogix 5570 Standard and Conformal Coated Controller Energy Storage Modules

Instead of a battery, the standard and conformal coated 1756-L7S controllers are shipped with a 1756-ESMCAP energy storage module (ESM) already installed.

Technical Specifications - GuardLogix 5570 Controller Energy Storage Modules⁽¹⁾

Attribute	1756-ESMCAP, 1756-ESMCAPK	1756-ESMNSE, 1756-ESMNSEK	1756-ESMNRM, 1756-ESMNRMK
Description	Capacitor energy storage module (removable, ships installed with every controller).	Capacitor energy storage module (removable, no residual WallClockTime power backup). Use this ESM if your application requires that the installed ESM depletes its residual energy to 40 µJ or less before transporting it into or out of your application. Additionally, you can use this ESM with a 1756-L73 (8 MB) or smaller memory-sized controller only. Wait at least 20 minutes for the residual stored energy to decrease to 40 µJ or less before you remove the ESM.	Capacitor energy storage module (non-removable, helps prevent USB connection and SD card use to help secure the controller). If the SD card is installed prior to insertion of the 1756-ESMNRM module, the SD card remains functional, but not removable. This ESM provides your application an enhanced degree of security.
Current draw @ 5.1V DC	330 mA	300 mA	330 mA
Temperature code	T4		
Enclosure type rating	None (open-style)		

(1) The energy storage modules for the On-Machine™ Armor ControlLogix and Armor GuardLogix 5570 controllers are not field-accessible and must be returned to Rockwell Automation for maintenance or replacement.