Technical Data
Original Instructions

Allen-Bradley
by ROCKWELL AUTOMATION

ControlLogix and GuardLogix Controller Specifications

Bulletin 1756

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Summary of Changes

This publication details new and updated information for 5590 and 5580 controllers, memory cards, I/O and message rate capacities, and TÜV security specifications.

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

Table 1. Summary of Changes

Topic
In Additional Resources on page 122, added link to the ControlLogix 5590 Controllers Technical Data, 1756-TD900.
Added a list of available Redundancy Module Bundles on page .
For ControlLogix 5590 Controllers, added the number of supported axes to the Technical Features tables: ControlLogix 5590 Technical Features on page 7, ControlLogix-XT 5590 Technical Features on page 10, ControlLogix-XT 5590 Process Technical Features on page 16

Catalog Numbers

This publication applies to ControlLogix 5590, 5580, 5570, GuardLogix controllers, and redundancy modules listed in the catalog numbers.

This publication is applicable to these controllers and modules:

ControlLogix 5590 Controllers

ControlLogix® 5590 Controllers: 1756-L902TS, 1756-L905TS, 1756-L908TS, 1756-L915TS, 1756-L925TS, 1756-L950TS, 1756-L980TS, 1756-L9SP

ControlLogix-XT™ 5590 Controllers: 1756-L902TSXT, 1756-L905TSXT, 1756-L908TSXT, 1756-L915TSXT, 1756-L925TSXT, 1756-L950TSXT, 1756-L980TSXT, 1756-L9SPXT

ControlLogix-XT™ 5590 Process Controllers: 1756-L905TPSXT, 1756-L915TPSXT, 1756-L950TPSXT, 1756-L980TPSXT

ControlLogix 5580 and GuardLogix 5580 Controllers

ControlLogix® 5580 Controllers: 1756-L81E, 1756-L82E, 1756-L83E, 1756-L84E, 1756-L85E

ControlLogix® 5580 Conformal Coated Controllers: 1756-L81EK, 1756-L82EK, 1756-L83EK, 1756-L84EK, 1756-L85EK ControlLogix-XT™ 5580 Controllers: 1756-L81EXT, 1756-L82EXT, 1756-L83EXT, 1756-L84EXT, 1756-L85EXT

ControlLogix® 5580 No Stored Energy (NSE) Controllers: 1756-L81E-NSE, 1756-L82E-NSE, 1756-L83E-NSE, 1756-L84E-NSE, 1756-L85E-NSE ControlLogix-XT™ 5580 NSE Controllers: 1756-L81E-NSEXT, 1756-L82E-NSEXT, 1756-L83E-NSEXT, 1756-L84E-NSEXT, 1756-L85E-NSEXT

ControlLogix® 5580 Process Controllers: 1756-L81EP, 1756-L83EP, 1756-L85EP ControlLogix-XT™ 5580 Process Controllers: 1756-L81EPXT, 1756-L83EPXT, 1756-L85EPXT

GuardLogix® 5580 Controllers: 1756-L81ES, 1756-L82ES, 1756-L83ES, 1756-L84ES, 1756-L85ES, 1756-L8SP

GuardLogix® 5580 Conformal Coated Controllers: 1756-L81ESK, 1756-L82ESK, 1756-L83ESK, 1756-L84ESK, 1756-L8SPK

GuardLogix-XT™ 5580 Controllers: 1756-L81EXTS, 1756-L82EXTS, 1756-L83EXTS, 1756-L84EXTS, 1756-L8XTSP

1756-L81ESXT, 1756-L82ESXT, 1756-L83ESXT, 1756-L84ESXT, 1756-L8SPXT

ControlLogix 5570 and GuardLogix 5570 Controllers

ControlLogix® 5570 Controllers: 1756-L71, 1756-L72, 1756-L73, 1756-L74, 1756-L75

ControlLogix® 5570 Conformal Coated Controllers: 1756-L71K, 1756-L72K, 1756-L73K, 1756-L74K, 1756-L75K

ControlLogix-XT™ 5570 Controllers: 1756-L73XT

GuardLogix® 5570 Controllers: 1756-L71S, 1756-L72S, 1756-L73S, 1756-L7SP

GuardLogix® 5570 Conformal Coated Controllers: 1756-L71SK, 1756-L72SK, 1756-L73SK, 1756-L7SPK

GuardLogix® 5570 Controllers: 1756-L73SXT, 1756-L7SPXT

Armor™ ControlLogix® 5570 Controllers: 1756-L72EROM, 1756-L73EROM

Armor™ GuardLogix® 5570 Controllers: 1756-L72EROMS, 1756-L73EROMS

Controller Redundancy

ControlLogix® Redundancy Modules: 1756-RM3, 1756-RM3-2SFP, 1756-RM3XT, 1756-RM2, 1756-RM2K, 1756-RM2XT

ControlLogix 5590 Controllers

The ControlLogix® 5590 controllers are configurable for standard, safety, redundancy, and Logix SIS applications to help enable faster system performance, capacity, productivity, and security to help meet the growing demands of smart machines and equipment for manufacturing.

Working as part of the Integrated Architecture offering, these controllers provide:

- Support for Integrated Motion over EtherNet/IP™for high-speed motion applications.
- Support for security, including IEC-62443-4-2 SL 1 certification.
- Support for safety solutions.
- Support for redundancy solutions.
- Support for plant-wide process control.

Figure 1. ControlLogix 5590 Standard Controller with Safety Partner



With a ControlLogix® 5590 controller, up to SIL 2/PLd (Category 3) can be achieved with one controller using the safety task and safety I/O.

When used in combination with a ControlLogix® 5590 safety partner, a ControlLogix® 5590 controller can achieve up to SIL 3/PLe (Category 4).

ControlLogix® 5590 and ControlLogix® 5590 Process controllers provide extended protection in corrosive gas environments.

ATTENTION: Conformal Coated Products

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 remain installed in all unoccupied ports and memory cards must remain installed 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, but must be reinstalled after temporary access is complete.

IMPORTANT: When a ControlLogix® 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 ControlLogix® 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.

Logix SIS

With the Studio 5000 Logix Designer® application version 38 and later, you can use ControlLogix® 5590 controllers in a redundant configuration without a safety partner. In Logix SIS, ControlLogix® 5590 controllers can achieve up to SIL 3/PLe (Category 3). For more information, see the ControlLogix® 5590 High Availability Systems User Manual, publication 1756-UM901 .

Figure 2. ControlLogix® 5590 Controllers



ControlLogix 5590 Standard Controllers

ControlLogix 5590 Technical Features

Feature	1756-L902TS	1756-L905TS	1756-L908TS	1756-L915TS	1756-L925TS	1756-L950TS	1756-L980TS	1756-L9SP
Controller tasks	32 tasks, including a combination of one continuous, periodic, and event tasks 1000 programs/task							–
Built-in communication ports	1-port USB 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 Embedded Ethernet ports When the controller is enabled for redundancy: the safety partner is not supported, the Ethernet ports are limited to front port crossload, Integrated motion is not supported, and DeviceNet® and ControlNet® networks are not supported. For more information, see the ControlLogix® 5590 High Availability Systems User Manual, publication 1756-UM901.							–
USB port communication	USB 2.0 Type-C (does not support powering external devices) Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only							–
Ethernet performance	10/100/1000 Mbps							–
Axis per controller	512							–
I/O Capacity (Class 0/1) packets/second	• 164,000 without CIP Security™ • 60,000 with integrity • 30,000 with integrity and confidentiality I/O numbers are maximums; they assume no HMI/MSG. Packet rates vary depending on packet size.							–
Message Rate Capacity HMI/MSG (Class 3) - messages/second front port without safety partner	• 4000 without CIP Security™ • 3000 with integrity • 2700 with integrity and confidentiality HMI/MSG numbers are maximums, they assume no I/O.							–
Message Rate Capacity HMI/MSG (Class 3) - messages/second front port with safety partner	• 3000 without CIP Security™ • 2300 with integrity • 2000 with integrity and confidentiality HMI/MSG numbers are maximums, they assume no I/O.							–
Message Rate Capacity HMI/MSG (Class 3) - messages/second	7000 via local communication modules Controller performance not impacted by CIP Security™.							–

Feature	1756-L902TS	1756-L905TS	1756-L908TS	1756-L915TS	1756-L925TS	1756-L950TS	1756-L980TS	1756-L9SP
backplane without safety partner	HMI/MSG numbers are maximums, they assume no I/O.							
Message Rate Capacity HMI/MSG (Class 3) - messages/second backplane with safety partner	6000 Controller performance not impacted by CIP Security™. HMI/MSG numbers are maximums, they assume no I/O.							–
Message Rate Capacity HMI/MSG (Class 3) - messages/second backplane in Logix redundancy	3000 Controller performance not impacted by CIP Security™. HMI/MSG numbers are maximums, they assume no I/O.							–
Communication options	• EtherNet/IP™ • ControlNet® • DeviceNet® • SERCOS • Third-party process and device networks							–
EtherNet/IP™ nodes supported max An EtherNet/IP™ node is a device that you add directly to the I/O configuration, and counts toward the node limits of the controller.	30 nodes	100 nodes	200 nodes	300 nodes	400 nodes	500 nodes	600 nodes Additional EtherNet/IP™ nodes may be possible depending on remaining controller resources	–
OPC UA nodes supported max An OPC UA node is a data structure, such as a single tag, that can be exchanged between industrial processes to external resources and applications.	300 nodes	1000 nodes	2000 nodes	5000 nodes	20,000 nodes	50,000 nodes	100,000 nodes	–
Network connections per network module located in the local chassis	• ControlLogix® 5590 Controllers front EtherNet/IP™ ports. • 1024 TCP connections • 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)							–
Integrated motion	• SERCOS interface • Analog options (encoder input, LDT input, SSI input) • Integrated Motion on the EtherNet/IP™ network							–

Feature	1756-L902TS	1756-L905TS	1756-L908TS	1756-L915TS	1756-L925TS	1756-L950TS	1756-L980TS	1756-L9SP
Controller redundancy	Full support When the controller is enabled for redundancy: the safety partner is not supported, the Ethernet ports are limited to front port crossload, Integrated motion is not supported, and DeviceNet® and ControlNet® networks are not supported.							–
Programming languages	• Relay ladder logic (RLL) • Structured text • Function Block Diagram • Sequential function chart (SFC)							–

Table 2. ControlLogix 5590 Technical Specifications

Attribute	1756-L902TS	1756-L905TS	1756-L908TS	1756-L915TS	1756-L925TS	1756-L950TS	1756-L980TS	1756-L9SP
Standard memory	2 MB	5 MB	8 MB	15 MB	25 MB	50 MB	80 MB	–
Safety memory	2 MB	5 MB	8 MB	12 MB	12 MB	12 MB	12 MB	Configured to match primary controller
Digital I/O max	128,000							–
Analog I/O max	4000							–
Total I/O max	128,000							–
Nonvolatile memory storage	8 GB microSD™ card (1784-MSD8) **Important:** Memory cards are sold separately.							–
Energy storage module	Embedded in controller, non-removable							
Current draw @ 1.2V DC	5.0 mA							
Current draw @ 5.1V DC	1.20 A							
Power dissipation	6.2 W							
Thermal dissipation	21.2 BTU/hr							
Isolation voltage	50V (continuous), Basic Insulation type, USB port to backplane, Ethernet port to backplane, and USB port to Ethernet port Compliant and tested according to IEC/UL 61010-1							–
Weight approx	0.394 kg (.868 lb)							
Slot width	1							
Module location	Chassis-based, any slot							Chassis slot immediately to the right of

Table 2. ControlLogix 5590 Technical Specifications (continued)

Attribute	1756-L902TS	1756-L905TS	1756-L908TS	1756-L915TS	1756-L925TS	1756-L950TS	1756-L980TS	1756-L9SP
								the primary controller
Chassis	1756-A4, 1756-A4K, 1756-A7, 1756-A7K, 1756-A10, 1756-A10K, 1756-A13, 1756-A13K, 1756-A17, 1756-A17 K Series B, Series C							
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 - on USB port 2 - on Ethernet ports Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.							–
Wire size	Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2							–
Temperature code	T4							
Enclosure type rating	None (Open style)							

ControlLogix 5590 Environmental Specifications

Attribute	1756-L902TS, 1756-L905TS, 1756-L908TS, 1756-L915TS, 1756-L925TS, 1756-L950TS, 1756-L980TS, 1756-L9SP
Temperature, operating (SIL 2/PLd) IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0 °C ≤ Ta ≤ +60 °C (+32 °F ≤ Ta ≤ +140 °F) for Series C Chassis 0 °C ≤ Ta ≤ +50 °C (+32 °F ≤ Ta ≤ +122 °F) for Series B Chassis
Temperature, operating (SIL 3/PLe) IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0 °C ≤ Ta ≤ +60 °C (+32 °F ≤ Ta ≤ +140 °F) for Series C Chassis 0 °C ≤ Ta ≤ +50 °C (+32 °F ≤ Ta ≤ +122 °F) for Series B Chassis
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) Chassis Series C and B
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Conformal coated	No

Attribute	1756-L902TS, 1756-L905TS, 1756-L908TS, 1756-L915TS, 1756-L925TS, 1756-L950TS, 1756-L980TS, 1756-L9SP
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 ControlLogix® 5590 controllers require a NEMA 1 or equivalent, windowless, metal enclosure
ESD immunity	IEC 61000-4-2
Radiated RF immunity	IEC 61000-4-3
EFT/B Immunity Shielded cable is recommended for a coarse Update Rate (CUR)/ Requested Packet Interval (RPI) of 6ms or less. To use unshielded cable, the CUR/RPI must be at least 8ms.	IEC 61000-4-4
Surge Transient Immunity	IEC 61000-4-5
Conducted RF Immunity	IEC 61000-4-6

ControlLogix 5590 Certifications

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

Certification	1756-L902TS, 1756-L905TS, 1756-L908TS, 1756-L915TS, 1756-L925TS, 1756-L950TS, 1756-L980TS, 1756-L9SP
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.
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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

Certification	1756-L902TS, 1756-L905TS, 1756-L908TS, 1756-L915TS, 1756-L925TS, 1756-L950TS, 1756-L980TS, 1756-L9SP
IECEx	IECEx System, compliant with: • IEC 60079-0; General Requirements • IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
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
EtherNet/IP™	ODVA conformance tested to EtherNet/IP™ specifications
CIP Security™	ODVA conformance tested to CIP Security™ specifications
Product safety function (MD)	• Suitable for applications up to Cat. 3/PLd according to EN ISO 13849-1 and SIL CL 2 according to EN/IEC 62061 • Suitable for applications up to Cat. 4/PLe according to EN ISO 13849-1 and SIL CL 3 according to EN/IEC 62061 when used in combination with the 1756-L9SP safety partner
TÜV certified for functional safety	• Capable of Cat. 4/PLe according to EN ISO 13849-1 and SIL 3 according to EN 62061/IEC 61508 when used as described in the ControlLogix® 5590 Controllers User Manual, publication 1756-UM900 • Capable of Cat. 3/PLe according to EN ISO 13849-1 and SIL 3 according to EN 62061/IEC 61508 when used as described in the ControlLogix® 5590 High Availability Systems User Manual, publication 1756-UM901 • TÜV 01/205/6058
TÜV certified for security	IEC 62443-4-2 SL1
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

ControlLogix-XT 5590 Controllers

The ControlLogix-XT™ 5590 controllers function in the same way as traditional ControlLogix® Controllers. These products include control and communication system components that are conformal coated to add a degree of protection against harsh, corrosive gas environments.

ControlLogix-XT 5590 Technical Features

Feature	1756-L902T SXT	1756-L905T SXT	1756-L908T SXT	1756-L915T SXT	1756-L925T SXT	1756-L950T SXT	1756-L980T SXT	1756-L9SPXT
Controller tasks	32 tasks, including a combination of one continuous, periodic, and event tasks 1000 programs/task							–

Feature	1756-L902T SXT	1756-L905T SXT	1756-L908T SXT	1756-L915T SXT	1756-L925T SXT	1756-L950T SXT	1756-L980T SXT	1756-L9SPXT
Built-in communication ports	1-port USB 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 Embedded Ethernet ports When the controller is enabled for redundancy: the safety partner is not supported, the Ethernet ports are limited to front port crossload, Integrated motion is not supported, and DeviceNet® and ControlNet® networks are not supported. For more information, see the ControlLogix-XT™ 5590 High Availability Systems User Manual, publication 1756-UM901.							–
USB port communication	USB 2.0 Type-C (does not support powering external devices) Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only							–
Ethernet performance	10/100/1000 Mbps							–
Axis per controller	512							–
I/O Capacity (Class 0/1) - packets/second	• 164,000 without CIP Security • 60,000 with integrity • 30,000 with integrity and confidentiality I/O numbers are maximums; they assume no HMI/MSG. Packet rates vary depending on packet size.							–
Message Rate Capacity HMI/MSG (Class 3) - messages/second front port without safety partner	• 4000 without CIP Security • 3000 with integrity • 2700 with integrity and confidentiality HMI/MSG numbers are maximums, they assume no I/O.							–
Message Rate Capacity HMI/MSG (Class 3) - messages/second front port with safety partner	• 3000 without CIP Security™ • 2300 with integrity • 2000 with integrity and confidentiality HMI/MSG numbers are maximums, they assume no I/O.							–
Message Rate Capacity HMI/MSG (Class 3) - messages/second backplane without safety partner	7000 via local communication modules HMI/MSG numbers are maximums, they assume no I/O.							–
Message Rate Capacity HMI/MSG (Class 3) - messages/second backplane with safety partner	6000 HMI/MSG numbers are maximums, they assume no I/O.							–
Message Rate Capacity HMI/MSG (Class 3) - messages/second backplane in Logix redundancy	3000 HMI/MSG numbers are maximums, they assume no I/O.							–

Feature	1756-L902T SXT	1756-L905T SXT	1756-L908T SXT	1756-L915T SXT	1756-L925T SXT	1756-L950T SXT	1756-L980T SXT	1756-L9SPXT
Communication options	EtherNet/IP™, ControlNet®, DeviceNet®, SERCOS and third-party process and device networks							–
EtherNet/IP™nodes supported max An EtherNet/IP™ node is a device that you add directly to the I/O configuration, and counts toward the node limits of the controller.	30 nodes	100 nodes	200 nodes	300 nodes	400 nodes	500 nodes	600 nodes Additional EtherNet/IP™ nodes may be possible depending on remaining controller resources	–
OPC UA nodes supported max An OPC UA node is a data structure, such as a single tag, that can be exchanged between industrial processes to external resources and applications.	300 nodes	1000 nodes	2000 nodes	5000 nodes	20,000 nodes	50,000 nodes	100,000 nodes	–
Network connections per network module located in the local chassis	• ControlLogix® 5590 Controllers front EtherNet/IP™ ports. • 1000 I/O; 528 EtherNet/IP™; 512 TCP (1756-EN4TR variant rated for harsh environments) • 256 EtherNet/IP™; 128 TCP (1756-EN2x variant rated for harsh environments) • 128 EtherNet/IP™; 64 TCP (1756-ENBT variant rated for harsh environments) • 128 ControlNet® (1756-CN2/B variant rated for harsh environments) • 100 ControlNet® (1756-CN2/A variant rated for harsh environments) • 40 ControlNet® (1756-CNB/D, 1756-CNB/E variant rated for harsh environments)							–
Integrated motion	• SERCOS interface • Analog options (encoder input, LDT input, SSI input) • Integrated Motion on the EtherNet/IP™ network							–
Controller redundancy	Full support When the controller is enabled for redundancy: the safety partner is not supported, the Ethernet ports are limited to front port crossload, Integrated motion is not supported, and DeviceNet® and ControlNet® networks are not supported.							–
Programming languages	• Relay ladder logic (RLL) • Structured text • Function Block Diagram • Sequential function chart (SFC)							–

ControlLogix-XT 5590 Technical Specifications

Attribute	1756-L902T SXT	1756-L905T SXT	1756-L908T SXT	1756-L915T SXT	1756-L925T SXT	1756-L950T SXT	1756-L980T SXT	1756-L9SPXT
Standard memory	2 MB	5 MB	8 MB	15 MB	25 MB	50 MB	80 MB	–

Attribute	1756-L902T SXT	1756-L905T SXT	1756-L908T SXT	1756-L915T SXT	1756-L925T SXT	1756-L950T SXT	1756-L980T SXT	1756-L9SPXT
Safety memory	2 MB	5 MB	8 MB	12 MB	12 MB	12 MB	12 MB	Configured to match primary controller
Digital I/O, max	128,000							–
Analog I/O, max	4000							–
Total I/O, max	128,000							–
Nonvolatile memory storage	8 GB microSD™ card (1784-MSD8XT) **Important:** Memory cards are sold separately. For XT controllers, the installed memory card must remain in place to maintain the published XT corrosion specifications.							–
Energy storage module	Embedded in controller, non-removable							
Current draw @ 1.2V DC	5.0 mA							
Current draw @ 5.1V DC	1.20 A							
Power dissipation	6.2 W							
Thermal dissipation	21.2 BTU/hr							
Isolation voltage	50V (continuous), Basic Insulation type, USB port to backplane, Ethernet port to backplane, and USB port to Ethernet port. Compliant and tested according to IEC/UL 61010-1							–
Weight, approx	0.394 kg (.868 lb)							
Slot width	1							
Module location	Chassis-based, any slot							Chassis slot immediately to the right of the primary controller
Chassis	1756-A7XT, 1756-A10XT, Series C 1756-A7ZXT, 1756-A10ZXT							
Power supply, standard	1756-PAXT, 1756-PBXT, 1756-PA30XT, 1756-PB30XT							
Power supply, redundant	–							
Wire category	3 - on USB port 2 - on Ethernet ports Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.							–
Wire size	Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2.							–

Attribute	1756-L902T SXT	1756-L905T SXT	1756-L908T SXT	1756-L915T SXT	1756-L925T SXT	1756-L950T SXT	1756-L980T SXT	1756-L9SPXT
	Where the operating temperature exceeds 60 °C, the maximum cable length is 20 meters.							
Temperature code	T4							
Enclosure type rating	None (Open style)							

ControlLogix-XT 5590 Environmental Specifications

Attribute	1756-L902TSXT, 1756-L905TSXT, 1756-L908TSXT, 1756-L915TSXT, 1756-L925TSXT, 1756-L950TSXT, 1756-L980TSXT, 1756-L9SPXT
Temperature, operating (SIL 2/PLd) IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	-25 °C ≤ Ta ≤ +70 °C (-13°F ≤ Ta ≤ +158 °F)
Temperature, operating (SIL 3/PLe) IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	-25 °C ≤ Ta ≤ +70 °C (-13°F ≤ Ta ≤ +158 °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	Yes
Corrosive Atmosphere • ASTM B845-97 Method K Accelerated Test (30-Day Exposure) • Plus additional Rockwell Automation® proprietary accelerated corrosive environment test protocol for specific industries with sources of gaseous sulfur compounds.	Severity Level GX per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases (up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity.) Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances 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.
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 ControlLogix® 5590 controllers require a NEMA 1 or equivalent, windowless, metal enclosure.

Attribute	1756-L902TSXT, 1756-L905TSXT, 1756-L908TSXT, 1756-L915TSXT, 1756-L925TSXT, 1756-L950TSXT, 1756-L980TSXT, 1756-L9SPXT
ESD immunity	IEC 61000-4-2
Radiated RF immunity	IEC 61000-4-3
EFT/B Immunity Shielded cable is recommended for a coarse Update Rate (CUR)/ Requested Packet Interval (RPI) of 6ms or less. To use unshielded cable, the CUR/RPI must be at least 8ms.	IEC 61000-4-4
Surge Transient Immunity	IEC 61000-4-5
Conducted RF Immunity	IEC 61000-4-6

ControlLogix-XT 5590 Certifications

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

Certification	1756-L902TSXT, 1756-L905TSXT, 1756-L908TSXT, 1756-L915TSXT, 1756-L925TSXT, 1756-L950TSXT, 1756-L980TSXT, 1756-L9SPXT
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.
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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 60079-0; General Requirements • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
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

Certification	1756-L902TSXT, 1756-L905TSXT, 1756-L908TSXT, 1756-L915TSXT, 1756-L925TSXT, 1756-L950TSXT, 1756-L980TSXT, 1756-L9SPXT
EtherNet/IP™	ODVA conformance tested to EtherNet/IP™ specifications
CIP Security™	ODVA conformance tested to CIP Security™ specifications
Product safety function (MD)	• Suitable for applications up to Cat. 3/PLd according to EN ISO 13849-1 and SIL CL 2 according to EN/IEC 62061 • Suitable for applications up to Cat. 4/PLe according to EN ISO 13849-1 and SIL CL 3 according to EN/IEC 62061 when used in combination with the 1756-L9SPXT safety partner
TÜV certified for functional safety	• Capable of Cat. 4/PLe according to EN ISO 13849-1 and SIL 3 according to EN 62061/IEC 61508 when used as described in the ControlLogix® 5590 Controllers User Manual, publication 1756-UM900 • Capable of Cat. 3/PLe according to EN ISO 13849-1 and SIL 3 according to EN 62061/IEC 61508 when used as described in the ControlLogix® 5590 High Availability Systems User Manual, publication 1756-UM901 • TÜV 01/205/6058
TÜV certified for security	IEC 62443-4-2 SL1
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

ControlLogix-XT 5590 Process Controllers

The ControlLogix-XT™ 5590 process controllers are an extension of the Logix 5000® controller family that focuses on plant-wide process control. These process controllers come configured with a default process tasking model and dedicated PlantPAx® process instructions optimized for process applications and that improve design and deployment efforts.

ControlLogix-XT 5590 Process Technical Features

Feature	1756-L905TPSXT	1756-L915TPSXT	1756-L950TPSXT	1756-L980TPSXT	1756-L9SPXT
Controller tasks	32 tasks, including a combination of one continuous, periodic, and event tasks 1000 programs/task				–
Built-in communication ports	1 port USB 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 Embedded Ethernet ports When the controller is enabled for redundancy: the safety partner is not supported, the Ethernet ports are limited to front port crossload, Integrated motion is not supported, and DeviceNet® and ControlNet® networks are not supported. For more information, see the ControlLogix® 5590 High Availability Systems User Manual, publication 1756-UM901.				–
USB port communication	USB 2.0 Type-C (does not support powering external devices) Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only				–

Feature	1756-L905TPSXT	1756-L915TPSXT	1756-L950TPSXT	1756-L980TPSXT	1756-L9SPXT
Ethernet performance	10/100/1000 Mbps				–
Axis per controller	512				–
I/O Capacity (Class 0/1) - packets/second	• 164,000 without CIP Security™ • 60,000 with integrity • 30,000 with integrity and confidentiality I/O numbers are maximums; they assume no HMI/MSG. Packet rates vary depending on packet size.				–
Message Rate Capacity HMI/MSG (Class 3) - messages/second front port without safety partner	• 4000 without CIP Security™ • 3000 with integrity • 2700 with integrity and confidentiality HMI/MSG numbers are maximums, they assume no I/O.				–
Message Rate Capacity HMI/MSG (Class 3) - messages/second front port with safety partner	• 3000 without CIP Security™ • 2300 with integrity • 2000 with integrity and confidentiality HMI/MSG numbers are maximums, they assume no I/O.				–
Message Rate Capacity HMI/MSG (Class 3) - messages/second backplane without safety partner	7000 via local communication modules HMI/MSG numbers are maximums, they assume no I/O.				–
Message Rate Capacity HMI/MSG (Class 3) - messages/second backplane with safety partner	6000 HMI/MSG numbers are maximums, they assume no I/O.				–
Message Rate Capacity HMI/MSG (Class 3) - messages/second backplane in Logix redundancy	3000 HMI/MSG numbers are maximums, they assume no I/O.				–
Communication options	EtherNet/IP™, ControlNet®, DeviceNet®, SERCOS, and third-party process and device networks				–
EtherNet/IP™ nodes supported max An EtherNet/IP™ node is a device that you add directly to the I/O configuration, and counts toward the node limits of the controller.	100 nodes	300 nodes	500 nodes	600 nodes Additional EtherNet/IP™ nodes maybe possible depending on remaining controller resources.	–
OPC UA nodes supported max An OPC UA node is a data structure, such as a single tag, that can be exchanged between industrial	1000 nodes	5000 nodes	50,000 nodes	100,000 nodes	–

Feature	1756-L905TPSXT	1756-L915TPSXT	1756-L950TPSXT	1756-L980TPSXT	1756-L9SPXT
processes to external resources and applications.					
Network connections per network module located in the local chassis	• ControlLogix® 5590 Controllers front EtherNet/IP™ ports. • 1000 I/O; 528 EtherNet/IP™; 512 TCP (1756-EN4TR variant rated for harsh environments) • 256 EtherNet/IP™; 128 TCP (1756-EN2*x* variant rated for harsh environments) • 128 EtherNet/IP™; 64 TCP (1756-ENBT variant rated for harsh environments) • 128 ControlNet® (1756-CN2/B variant rated for harsh environments) • 100 ControlNet® (1756-CN2/A variant rated for harsh environments) • 40ControlNet® (1756-CNB/D, 1756-CNB/E variant rated for harsh environments)				–
Integrated motion	• SERCOS interface • Analog options (encoder input, LDT input, SSI input) • Integrated Motion on the EtherNet/IP™ network				–
Controller redundancy	Full support When the controller is enabled for redundancy: the safety partner is not supported, the Ethernet ports are limited to front port crossload, Integrated motion is not supported, and DeviceNet® and ControlNet® networks are not supported.				–
Programming languages	• Relay Ladder Logic (RLL) • Structured Text • Function Block Diagram • Sequential Function Chart (SFC)				–

ControlLogix-XT 5590 Process Technical Specifications

Attribute	1756-L905TPSXT	1756-L915TPSXT	1756-L950TPSXT	1756-L980TPSXT	1756-L9SPXT
Standard memory	5 MB	15 MB	50 MB	80 MB	–
Safety memory	5 MB	12 MB	12 MB	12 MB	Configured to match primary controller
Digital I/O, max	128,000				–
Analog I/O, max	4000				–
Total I/O, max	128,000				–
Nonvolatile memory storage	8 GB microSD™ card (1784-MSD8XT) **Important:** Memory cards are sold separately. For XT controllers, the installed memory card must remain in place to maintain the published XT corrosion specifications.				–
Energy storage module	Embedded in controller, non-removable				
Current draw @ 1.2V DC	5.0 mA				
Current draw @ 5.1V DC	1.20 A				
Power dissipation	6.2 W				

Attribute	1756-L905TPSXT	1756-L915TPSXT	1756-L950TPSXT	1756-L980TPSXT	1756-L9SPXT
Thermal dissipation	21.2 BTU/hr				
Isolation voltage	50V (continuous), Basic Insulation type, USB port to backplane, Ethernet port to backplane, and USB port to Ethernet port. Compliant and tested according to IEC/UL 61010-1				–
Weight, approx	0.394 kg (.868 lb)				
Slot width	1				
Module location	Chassis-based, any slot				Chassis slot immediately to the right of the primary controller
Chassis	1756-A7XT, 1756-A10XT, Series C 1756-A7ZXT, 1756-A10ZXT				
Power supply, standard	1756-PAXT, 1756-PBXT, 1756-PA30XT, 1756-PB30XT				
Power supply, redundant	–				
Wire category	3 - on USB port 2 - on Ethernet ports Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.				–
Wire size	Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2. Where the operating temperature exceeds 60 °C, the maximum cable length is 20 meters.				–
Temperature code	T4				
Enclosure type rating	None (Open style)				

ControlLogix-XT 5590 Process Environmental Specifications

Attribute	1756-L905TPSXT, 1756-L915TPSXT, 1756-L950TPSXT, 1756-L980TPSXT, 1756-L9SPXT
Temperature, operating (SIL 2/PLd) IEC 60068-2-1 (Test Ad, Operating Cold) IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤ +158 °F)
Temperature, operating (SIL 3/PLe) IEC 60068-2-1 (Test Ad, Operating Cold) IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤ +158 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold) IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat)	-40...+85 °C (-40...+185 °F)

Attribute	1756-L905TPSXT, 1756-L915TPSXT, 1756-L950TPSXT, 1756-L980TPSXT, 1756-L9SPXT
IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Conformal coated	Yes
Corrosive Atmosphere • ASTM B845-97 Method K Accelerated Test (30-Day Exposure) • Plus additional Rockwell Automation® proprietary accelerated corrosive environment test protocol for specific industries with sources of gaseous sulfur compounds.	Severity Level GX per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases (up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity.) Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances 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.
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 ControlLogix® 5590 controllers require a NEMA 1 or equivalent, windowless, metal enclosure.
ESD immunity	IEC 61000-4-2
Radiated RF immunity	IEC 61000-4-3
EFT/B Immunity Shielded cable is recommended for a coarse Update Rate (CUR)/ Requested Packet Interval (RPI) of 6ms or less. To use unshielded cable, the CUR/RPI must be at least 8ms.	IEC 61000-4-4
Surge Transient Immunity	IEC 61000-4-5
Conducted RF Immunity	IEC 61000-4-6

ControlLogix-XT 5590 Process Certifications

Certification	1756-L905TPSXT, 1756-L915TPSXT, 1756-L950TPSXT, 1756-L980TPSXT, 1756-L9SPXT
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.
FM	FM Approved Equipment for use in Class I Division 2 Group A, B, C, D Hazardous Locations
CE and UKCA	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)

Certification	1756-L905TPSXT, 1756-L915TPSXT, 1756-L950TPSXT, 1756-L980TPSXT, 1756-L9SPXT
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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 60079-0; General Requirements • IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
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
EtherNet/IP™	ODVA conformance tested to EtherNet/IP™ specifications
CIP Security™	ODVA conformance tested to CIP Security™ specifications
Product safety function (MD)	• Suitable for applications up to Cat. 3/PLd according to EN ISO 13849-1 and SIL CL 2 according to EN/IEC 62061 • Suitable for applications up to Cat. 4/PLe according to EN ISO 13849-1 and SIL CL 3 according to EN/IEC 62061 when used in combination with the 1756-L9SPXT safety partner
TÜV certified for functional safety	• Capable of Cat. 4/PLe according to EN ISO 13849-1 and SIL 3 according to EN 62061/IEC 61508 when used as described in the ControlLogix® 5590 Controllers User Manual, publication 1756-UM900 • Capable of Cat. 3/PLe according to EN ISO 13849-1 and SIL 3 according to EN 62061/IEC 61508 when used as described in the ControlLogix® 5590 High Availability Systems User Manual, publication 1756-UM901 • TÜV 01/205/6058
TÜV certified for security	IEC 62443-4-2 SL1
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

ControlLogix 5590 Accessories

Use these accessories with ControlLogix® 5590 controllers.

Memory Cards

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

IMPORTANT: Memory cards are sold separately.

Through the programming software, you can manually trigger the controller to save to, or load from, nonvolatile memory or configure the controller to load from nonvolatile memory on powerup.

Table 3. 1784 Memory Cards Compatible with ControlLogix® 5590 Technical Specifications

Attribute	1784-MSD8	1784-MSD8XT
Type	microSD™ card	
Memory	8 GB	
Supported controllers	1756-L902TS, 1756-L905TS, 1756-L908TS, 1756-L915TS, 1756-L925TS, 1756-L950TS, 1756-L980TS	1756-L902TSXT, 1756-L905TSXT, 1756-L908TSXT, 1756-L915TSXT, 1756-L925TSXT, 1756-L950TSXT, 1756-L980TSXT, 1756-L905TPSXT, 1756-L915TPSXT, 1756-L950TPSXT, 1756-L980TPSXT
Weight, approx	0.4 g (0.01 oz)	

Ethernet and USB Port Protection Plugs

ControlLogix-XT™ 5590 and ControlLogix-XT™ 5590 Process controllers are shipped with port protection plugs installed to provide a degree of protection from corrosive atmospheres.

Rockwell Automation Part Number	Description	Supplier	Supplier Part Number
PN-579024	Plug for Ethernet Port	Würth Elektronik	726154101
PN-725450	Plug for USB Port	Würth Elektronik	726144002

ControlLogix 5580 Controllers

The ControlLogix® 5580 controller provides a scalable solution that is capable of addressing many I/O points. The controller can go into any slot of a ControlLogix® I/O chassis, and install multiple controllers in the same chassis.

The ControlLogix® 5580 controllers monitor and control I/O across the ControlLogix® backplane, and over network links. They have an embedded Ethernet port for a direct connection to Ethernet-enabled devices and networks, and support communication interface modules in the local chassis.

The ControlLogix® 5580 No Stored Energy (NSE) controllers are intended for use in applications that require the installed controller to deplete its residual stored energy to specific levels before transporting it into or out of your application.

The following controllers have conformal coating that adds a degree of protection against harsh, corrosive gas environments:

- ControlLogix® 5580 controllers with a 'K' or 'XT' in the catalog number
- ControlLogix® 5580 NSE controllers and ControlLogix® 5580 Process controllers

Figure 3. ControlLogix® 5580 Controller



ATTENTION: Conformal Coated Products

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 remain installed in all unoccupied ports and memory cards must remain installed 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, but must be reinstalled after temporary access is complete.

IMPORTANT: When a ControlLogix® 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 ControlLogix-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.

ControlLogix 5580 Standard and Conformal Coated Controllers

ControlLogix 5580 Standard and Conformal Coated Controllers Technical Features

Feature	1756-L81E, 1756-L81EK	1756-L82E, 1756-L82EK	1756-L83E, 1756-L83EK	1756-L84E, 1756-L84EK	1756-L85E, 1756-L85EK
Controller tasks	32 tasks, including a combination of one continuous, periodic, and event tasks 1000 programs per task				
Built-in communication ports	1-port USB				

Feature	1756-L81E, 1756-L81EK	1756-L82E, 1756-L82EK	1756-L83E, 1756-L83EK	1756-L84E, 1756-L84EK	1756-L85E, 1756-L85EK
With Studio 5000 Logix Designer® application version 30.00.00 or later.	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. Embedded Ethernet port				
USB port communication	USB 2.0 Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only				
Ethernet performance	10/100/1000 Mbps				
I/O Capacity (Class 0/1) – packets/second I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number. For information on integrity and confidentiality, see the CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001.	• 128,000 without CIP Security™ • 40,000 with integrity • 20,000 with integrity and confidentiality				

Message Rate Capacity HMI/MSG (Class 3) - messages/second

I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number.

For information on integrity and confidentiality, see the CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001.

Maximums assume that the processor is the target, not the originator.

front port	• 2000 without CIP Security™ • 1500 with integrity • 900 with integrity and confidentiality
backplane Controller performance not impacted by CIP Security.	• 4000 with multiple 1756-EN4TR modules
backplane in Logix redundancy	• 2000

Feature	1756-L81E, 1756-L81EK	1756-L82E, 1756-L82EK	1756-L83E, 1756-L83EK	1756-L84E, 1756-L84EK	1756-L85E, 1756-L85EK
Controller performance not impacted by CIP Security.					
Communication options	• EtherNet/IP™ • ControlNet® • DeviceNet® • Data Highway Plus™ • Remote I/O • SERCOS With Studio 5000 Logix Designer® application version 31.00.01 or later. • Third-party process and device networks				
EtherNet/IP™ nodes supported max An EtherNet/IP™ node is a device that you add directly to the I/O configuration, and counts toward the node limits of the controller. For more information on EtherNet/IP™ nodes, see the ControlLogix®5580 Controllers User Manual, publication 1756-UM543.	60 nodes With Studio 5000 Logix Designer®application version 29.00.02. 100 nodes With Studio 5000 Logix Designer® application version 30.00.00 or later.	80 nodes With Studio 5000 Logix Designer® application version 29.00.02. 175 nodes With Studio 5000 Logix Designer® application version 30.00.00 or later.	100 nodes With Studio 5000 Logix Designer® application versions 28.00.01 and 29.00.02. 250 nodes With Studio 5000 Logix Designer® application version 30.00.00 or later.	150 nodes With Studio 5000 Logix Designer® application version 29.00.02. 250 nodes With Studio 5000 Logix Designer® application version 30.00.00 or later.	300 nodes Additional EtherNet/IP™ nodes may be possible depending on remaining controller resources
OPC UA nodes supported max An OPC UA node is a data structure, such as a single tag, that can be exchanged between industrial processes to external resources and applications. For more information on OPC UA nodes, see the OPC UA in 5580 and 5380 Controllers User Manual, publication 1756-UM023. With Studio 5000 Logix Designer® application version 36.00.00 or later.	—	600 nodes	1200 nodes	10,000 nodes	15,000 nodes
Network connections per network module located in the local chassis	• ControlLogix® 5580 Controllers front EtherNet/IP™ port. • 1000 I/O; 528 EtherNet/IP™; 512 TCP (1756-EN4TR or variant rated for harsh environments) • 256 EtherNet/IP™; 128 TCP (1756-EN2x or variant rated for harsh environments) • 128 EtherNet/IP™; 64 TCP (1756-ENBT or variant rated for harsh environments) • 100 ControlNet® (1756-CN2/A or variant rated for harsh environments) • 40 ControlNet® (1756-CNB/D, 1756-CNB/E or variant rated for harsh environments) • 128 ControlNet® (1756-CN2/B or variant rated for harsh environments)				
Integrated motion	• SERCOS interface beginning with Studio 5000 Logix Designer® application version 31.00.01 or later • Analog options (encoder input, LDT input, SSI input) beginning with Studio 5000 Logix Designer® application version 31.00.01 or later • Integrated Motion on the EtherNet/IP™ network				

Feature	1756-L81E, 1756-L81EK	1756-L82E, 1756-L82EK	1756-L83E, 1756-L83EK	1756-L84E, 1756-L84EK	1756-L85E, 1756-L85EK
Controller redundancy	Full support with Studio 5000 Logix Designer® application version 33.00.02 or later When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet®, ControlNet®, RIO, Data Highway Plus™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.				
Programming languages	• Relay ladder logic (RLL) • Structured text • Function Block Diagram • Sequential function chart (SFC)				

ControlLogix 5580 Standard and Conformal Coated Controllers Technical Specifications

Attribute	1756-L81E, 1756-L81EK	1756-L82E, 1756-L82EK	1756-L83E, 1756-L83EK	1756-L84E, 1756-L84EK	1756-L85E, 1756-L85EK
Standard memory	3 MB	5 MB	10 MB	20 MB	40 MB
Digital I/O max	128,000				
Analog I/O max	4000				
Total I/O max	128,000				
Nonvolatile memory storage	4 GB Secure Digital (SD) card (1784-SD4) Larger versions may be available. **Important:** Memory cards are sold separately.				
Energy storage module	Embedded in controller, non-removable				
Number of power cycles	80,000				
Current draw @ 1.2V DC	5.0 mA				
Current draw @ 5.1V DC	1.20 A				
Power dissipation	6.2 W				
Thermal dissipation	21.2 BTU/hr				
Isolation voltage	50V (continuous), Basic Insulation type, USB port to backplane, Ethernet port to backplane, and USB port to Ethernet port. Compliant and tested according to IEC/UL 61010-1				
Weight approx	0.394 kg (.868 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, Series B, Series C				

Attribute	1756-L81E, 1756-L81EK	1756-L82E, 1756-L82EK	1756-L83E, 1756-L83EK	1756-L84E, 1756-L84EK	1756-L85E, 1756-L85EK
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 Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.	3 - on USB port 2 - on Ethernet ports				
Wire size	Ethernet connections: Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2				
Temperature code	T4				
Enclosure type rating	None (open-style)				

ControlLogix 5580 Standard and Conformal Coated Controllers Environmental Specifications

Attribute	1756-L81E, 1756-L82E, 1756-L83E, 1756-L84E, 1756-L85E	1756-L81EK, 1756-L82EK, 1756-L83EK, 1756-L84EK, 1756-L85EK
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), Standard Chassis, Series C. 0 °C ≤ Ta ≤ +50 °C (+32 °F ≤ Ta ≤ +122 °F), Standard Chassis, Series B	
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), Chassis Series C and B	
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing	
Conformal coated	No	Yes
Corrosive Atmosphere ASTM B845-97 Method K Accelerated Test (20-Day Exposure)	—	Severity Level G3 per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases 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

Attribute	1756-L81E, 1756-L82E, 1756-L83E, 1756-L84E, 1756-L85E	1756-L81EK, 1756-L82EK, 1756-L83EK, 1756-L84EK, 1756-L85EK
		Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances Up to 86.4 g/(m2·yr), mass loss of copper due to corrosion.
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	
EFT/B Immunity	IEC 61000-4-4	
Surge Transient Immunity	IEC 61000-4-5	
Conducted RF Immunity	IEC 61000-4-6	

ControlLogix 5580 Standard and Conformal Coated Controllers Certifications

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

Certification	1756-L81E, 1756-L81EK, 1756-L82E, 1756-L82EK, 1756-L83E, 1756-L83EK, 1756-L84E, 1756-L84EK, 1756-L85E, 1756-L85EK
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.
FM	FM Approved Equipment for use in Class I Division 2 Group A, B, C, D Hazardous Locations
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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

Certification	1756-L81E, 1756-L81EK, 1756-L82E, 1756-L82EK, 1756-L83E, 1756-L83EK, 1756-L84E, 1756-L84EK, 1756-L85E, 1756-L85EK
IECEx	IECEx System, compliant with: • IEC 60079-0; General Requirements • IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" • 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", certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of the 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
EtherNet/IP™	ODVA conformance tested to EtherNet/IP™ specifications
CIP Security™	ODVA conformance tested to CIP Security™ specifications With Studio 5000 Logix Designer® application version 32.00.01 or later.
TÜV certified for security	IEC 62443-4-2 SL1
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

ControlLogix 5580 NSE Controllers

ControlLogix 5580 NSE Controllers Technical Features

Feature	1756-L81EP	1756-L83EP	1756-L85EP
Controller tasks	32 tasks, including a combination of one continuous, periodic, and event tasks 1000 programs per task		
Built-in communication ports When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet®, ControlNet®, RIO, Data Highway Plus™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.	1 port USB 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. Embedded Ethernet port		

Feature	1756-L81EP	1756-L83EP	1756-L85EP
USB port communication	USB 2.0 Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only		
Ethernet performance	10/100/1000 Mbps		
I/O Capacity (Class 0/1) – packets/second I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP™ Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number. For information on integrity and confidentiality, see the CIP Security™ with Rockwell Automation Products Application Technique, publication SECURE-AT001.	• 128,000 without CIP Security™ • 40,000 with integrity • 20,000 with integrity and confidentiality		

Message Rate Capacity HMI/MSG (Class 3) - messages/second

I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP™ Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number.

For information on integrity and confidentiality, see the CIP Security™ with Rockwell Automation Products Application Technique, publication SECURE-AT001.

Maximums assume that the processor is the target, not the originator.

front port	• 2000 without CIP Security • 1500 with integrity • 900 with integrity and confidentiality		
backplane Controller performance not impacted by CIP Security™	• 4000 with multiple 1756-EN4TR modules		
backplane in Logix redundancy Controller performance not impacted by CIP Security™	• 2000		
Communication options	• EtherNet/IP™ • ControlNet® • DeviceNet® • Data Highway Plus™ • Remote I/O • SERCOS With Studio 5000 Logix Designer® application version 31.00.01 or later. • Third-party process and device networks		
EtherNet/IP™ nodes supported, max	100 nodes	250 nodes	300 nodes

Feature	1756-L81EP	1756-L83EP	1756-L85EP
A node is an EtherNet/IP™ device that you add directly to the I/O configuration, and counts toward the node limits of the controller. For more information on EtherNet/IP™ nodes, see the ControlLogix® 5580 Controllers User Manual, publication 1756-UM543.			Additional EtherNet/IP™ nodes may be possible depending on remaining controller resources
OPC UA nodes supported max An OPC UA node is a data structure, such as a single tag, that can be exchanged between industrial processes to external resources and applications. For more information on OPC UA nodes, see the OPC UA in 5580 and 5380 Controllers User Manual, publication 1756-UM023. With Studio 5000 Logix Designer® application version 36.00.00 or later.	–	1200 nodes	15,000 nodes
Network connections per network module located in the local chassis	• ControlLogix® 5580 Controllers front EtherNet/IP™ port. • 1000 I/O; 528 EtherNet/IP™; 512 TCP (1756-EN4TR or variant rated for harsh environments) • 256 EtherNet/IP™; 128 TCP (1756-EN2*x* or variant rated for harsh environments) • 128 EtherNet/IP™; 64 TCP (1756-ENBT or variant rated for harsh environments) • 100 ControlNet® (1756-CN2/A or variant rated for harsh environments) • 40 ControlNet® (1756-CNB/D, 1756-CNB/E or variant rated for harsh environments) • 128 ControlNet® (1756-CN2/B or variant rated for harsh environments)		
Integrated motion	• SERCOS interface • Analog options (encoder input, LDT input, SSI input) • Integrated Motion on the EtherNet/IP™ network		
Controller redundancy	Full support with Studio 5000 Logix Designer® application version 33.00.00 or later. When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet®, ControlNet®, RIO, Data Highway Plus™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015 .		
Programming languages	• Relay Ladder Logic (RLL) • Structured Text • Function Block Diagram • Sequential Function Chart (SFC)		

ControlLogix 5580 NSE Controllers Technical Specifications

Attribute	1756-L81E-NSE	1756-L82E-NSE	1756-L83E-NSE	1756-L84E-NSE	1756-L85E-NSE
Standard memory	3 MB	5 MB	10 MB	20 MB	40 MB
Digital I/O max	128,000				
Analog I/O max	4000				
Total I/O max	128,000				

Attribute	1756-L81E-NSE	1756-L82E-NSE	1756-L83E-NSE	1756-L84E-NSE	1756-L85E-NSE
Nonvolatile memory storage	4 GB Secure Digital (SD) card (1784-SD4) Larger versions may be available. **Important:** Memory cards are sold separately.				
Energy storage module	Embedded in controller, non-removable				
Number of power cycles	80,000				
Current draw @ 1.2V DC	5.0 mA				
Current draw @ 5.1V DC	1.20 A				
Power dissipation	6.2 W				
Thermal dissipation	21.2 BTU/hr				
Residual Stored Energy	Depletes to 400 µJ in 40 seconds				
Isolation voltage	50V (continuous), Basic Insulation type, USB port to backplane, Ethernet port to backplane, and USB port to Ethernet port. Compliant and tested according to IEC/UL 61010-1				
Weight approx	0.394 kg (.868 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, Series B, Series C				
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 Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.	3 - on USB port 2 - on Ethernet ports				
Wire size	Ethernet connections: Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2				
Temperature code	T4				
Enclosure type rating	None (open-style)				

ControlLogix 5580 NSE Controllers Environmental Specifications

Attribute	1756-L81E-NSE, 1756-L82E-NSE, 1756-L83E-NSE, 1756-L84E-NSE, 1756-L85E-NSE
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), Standard Chassis, Series C. 0 °C ≤ Ta ≤ +50 °C (+32 °F ≤ Ta ≤ +122 °F), Standard Chassis, Series B
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), Chassis Series C and B
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Conformal coated	Yes
Corrosive Atmosphere ASTM B845-97 Method K Accelerated Test (20-Day Exposure)	Severity Level G3 per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases 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. Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances Up to 86.4 g/(m2·yr), mass loss of copper due to corrosion.
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
EFT/B Immunity	IEC 61000-4-4
Surge Transient Immunity	IEC 61000-4-5
Conducted RF Immunity	IEC 61000-4-6

ControlLogix 5580 NSE Controllers Certifications

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

Certification	1756-L81E-NSE, 1756-L82E-NSE, 1756-L83E-NSE, 1756-L84E-NSE, 1756-L85E-NSE
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.

Certification	1756-L81E-NSE, 1756-L82E-NSE, 1756-L83E-NSE, 1756-L84E-NSE, 1756-L85E-NSE
	UL Listed for Class I, Division 2 Group A, B, C, D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
FM	FM Approved Equipment for use in Class I Division 2 Group A, B, C, D Hazardous Locations
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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 60079-0; General Requirements • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • 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
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
EtherNet/IP™	ODVA conformance tested to EtherNet/IP™ specifications
CIP Security™	ODVA conformance tested to CIP Security™ specifications With Studio 5000 Logix Designer® application version 32.00.01 or later.
TÜV certified for security	IEC 62443-4-2 SL1 With Studio 5000 Logix Designer® application version 32.00.01 or later.
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

ControlLogix 5580 Process Controllers

The ControlLogix® 5580 process controllers are an extension of the Logix 5000® controller family that focuses on plant-wide process control. These process controllers come configured with a default process tasking model and dedicated PlantPAx® process instructions optimized for process applications and that improve design and deployment efforts.

The ControlLogix® 5580 process controllers provide extended protection in corrosive gas environments and can be used in temperature extremes from -25...+70 °C (-13...+158 °F) when deployed as part of a Logix-XT system.

ControlLogix 5580 Process Controllers Technical Features

Feature	1756-L81EP	1756-L83EP	1756-L85EP
Controller tasks	32 tasks, including a combination of one continuous, periodic, and event tasks, 1000 programs/task		
Built-in communication ports When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet®, ControlNet®, RIO, Data Highway Plus™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.	1 port USB 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. Embedded Ethernet port		
USB port communication	USB 2.0 Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only		
Ethernet performance	10/100/1000 Mbps		
I/O Capacity (Class 0/1) – packets/second I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP™ Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number. For information on integrity and confidentiality, see the CIP Security™ with Rockwell Automation Products Application Technique, publication SECURE-AT001.	• 128,000 without CIP Security™ • 40,000 with integrity • 20,000 with integrity and confidentiality		
Message Rate Capacity HMI/MSG (Class 3) - messages/second I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP™ Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number. For information on integrity and confidentiality, see the CIP Security™ with Rockwell Automation Products Application Technique, publication SECURE-AT001.			

Feature	1756-L81EP	1756-L83EP	1756-L85EP
Maximums assume that the processor is the target, not the originator.			
front port	• 2000 without CIP Security™ • 1500 with integrity • 900 with integrity and confidentiality		
backplane Controller performance not impacted by CIP Security™.	• 4000 with multiple 1756-EN4TR modules		
backplane in Logix redundancy	• 2000		
Communication options	• EtherNet/IP™ • ControlNet® • DeviceNet® • Data Highway Plus™ • Remote I/O • SERCOS • Third-party process and device networks		
EtherNet/IP™ nodes supported, max A node is an EtherNet/IP™ device that you add directly to the I/O configuration, and counts toward the node limits of the controller. For more information on EtherNet/IP nodes, see the ControlLogix® 5580 Controllers User Manual, publication 1756-UM543.	100 nodes	250 nodes	300 nodes Additional EtherNet/IP™ nodes may be possible depending on remaining controller resources.
OPC UA nodes supported max An OPC UA node is a data structure, such as a single tag, that can be exchanged between industrial processes to external resources and applications. For more information on OPC UA nodes, see the OPC UA in 5580 and 5380 Controllers User Manual, publication 1756-UM023. With Studio 5000 Logix Designer® application version 36.00.00 or later.	–	1200 nodes	15,000 nodes
Network connections per network module located in the local chassis	• ControlLogix® 5580 Controllers front EtherNet/IP™ port. • 1000 I/O; 528 EtherNet/IP™; 512 TCP (1756-EN4TR or variant rated for harsh environments) • 256 EtherNet/IP™; 128 TCP (1756-EN2*x* or variant rated for harsh environments) • 128 EtherNet/IP™; 64 TCP (1756-ENBT or variant rated for harsh environments) • 100 ControlNet® (1756-CN2/A or variant rated for harsh environments) • 40 ControlNet® (1756-CNB/D, 1756-CNB/E or variant rated for harsh environments) • 128 ControlNet® (1756-CN2/B or variant rated for harsh environments)		
Integrated motion	• SERCOS interface • Analog options (encoder input, LDT input, SSI input) • Integrated Motion on the EtherNet/IP™ network		
Controller redundancy	Full support with Studio 5000 Logix Designer® application version 33.00.00 or later.		

Feature	1756-L81EP	1756-L83EP	1756-L85EP
	When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet®, ControlNet®, RIO, Data Highway Plus™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.		
Programming languages	• Relay Ladder Logic (RLL) • Structured Text • Function Block Diagram • Sequential Function Chart (SFC)		

ControlLogix 5580 Controllers Technical Specifications

Attribute	1756-L81EP	1756-L83EP	1756-L85EP
Standard memory	3 MB	10 MB	40 MB
Digital I/O, max	128,000		
Analog I/O, max	4000		
Total I/O, max	128,000		
Nonvolatile memory storage	4 GB Secure Digital (SD) card (1784-SD4) Larger versions may be available. **Important:** Memory cards are sold separately.		
Energy storage module	Embedded in controller, non-removable		
Number of power cycles	80,000		
Current draw @ 1.2V DC	5.0 mA		
Current draw @ 5.1V DC	1.20 A		
Power dissipation	6.2 W		
Thermal dissipation	21.2 BTU/hr		
Isolation voltage	50V (continuous), Basic Insulation type, USB port to backplane, Ethernet port to backplane, and USB port to Ethernet port. Compliant and tested according to IEC/UL 61010-1		
Weight, approx	0.394 kg (.868 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, Series B, Series C • 1756-A7XT, 1756-A10XT Series C • 1756-A7ZXT, 1756-A10ZXT		
Power supply, standard	1756-PA50, 1756-PA50K, 1756-PA72, 1756-PA72K, 1756-PA75, 1756-PA75K, 1756-PB50, 1756-PB50K		

Attribute	1756-L81EP	1756-L83EP	1756-L85EP
	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 Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.	3 - on USB port 2 - on Ethernet ports		
Wire size	Ethernet connections: Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2		
Temperature code	T4		
Enclosure type rating	None (open-style)		

ControlLogix 5580 Process Controllers Environmental Specifications

Attribute	1756-L81EP, 1756-L83EP, 1756-L85EP
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)	-25 °C ≤ Ta ≤ +70 °C (-13°F ≤ Ta ≤ +158 °F) XT Chassis, Series C or ZXT Chassis -25 °C ≤ Ta ≤ +60 °C (-13 °F ≤ Ta ≤ +140 °F) Standard Chassis, Series C -25 °C ≤ Ta ≤ +50 °C (-13 °F ≤ Ta ≤ +122 °F) Standard Chassis, Series B
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) XT Chassis, Series C or ZXT Chassis, Standard Chassis, Series C or B
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Conformal coated	Yes
Corrosive Atmosphere ASTM B845-97 Method K Accelerated Test (20-Day Exposure)	Severity Level G3 per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases 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. Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances Up to 86.4 g/(m2·yr), mass loss of copper due to corrosion.
Vibration	IEC 60068-2-6 (Test Fc, Operating)
Shock, operating	IEC 60068-2-27 (Test Ea, Unpackaged Shock)

Attribute	1756-L81EP, 1756-L83EP, 1756-L85EP
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
EFT/B Immunity	IEC 61000-4-4
Surge Transient Immunity	IEC 61000-4-5
Conducted RF Immunity	IEC 61000-4-6

ControlLogix 5580 Process Controllers Certifications

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

Certification	1756-L81EP, 1756-L83EP, 1756-L85EP
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.
FM	FM Approved Equipment for use in Class I Division 2 Group A, B, C, D Hazardous Locations
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of Radio Waves Act, Clause 3

Certification	1756-L81EP, 1756-L83EP, 1756-L85EP
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
DeviceNet®	ODVA conformance tested to EtherNet/IP™ specifications
CIP Security™	ODVA conformance tested to CIP Security specifications
TÜV certified for security	IEC 62443-4-2 SL1
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

ControlLogix-XT 5580 Controllers

The ControlLogix-XT™ 5580 controllers function in the same way as traditional ControlLogix® Controllers. These products include control and communication system components that are conformal coated to add a degree of protection against harsh, corrosive gas environments.

ControlLogix-XT 5580 Controllers Technical Features

Feature	1756-L81EXT	1756-L82EXT	1756-L83EXT	1756-L84EXT	1756-L85EXT
Controller tasks	32 tasks, including a combination of one continuous, periodic, and event tasks; 1000 programs per task				
Built-in communication ports When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet®, ControlNet®, RIO, Data Highway Plus™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015 .	1-port USB 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. Embedded Ethernet port				
USB port communication	USB 2.0 Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only				
Ethernet performance	10/100/1000 Mbps				
I/O Capacity (Class 0/1) – packets/second I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary	• 128,000 without CIP Security™ • 40,000 with integrity • 20,000 with integrity and confidentiality				

Feature	1756-L81EXT	1756-L82EXT	1756-L83EXT	1756-L84EXT	1756-L85EXT
depending on packet size. For more details, see Troubleshoot EtherNet/IP™ Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number. For information on integrity and confidentiality, see the CIP Security™ with Rockwell Automation Products Application Technique, publication SECURE-AT001.					
Message Rate Capacity HMI/MSG (Class 3) - messages/second I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP™ Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number. For information on integrity and confidentiality, see the CIP Security™ with Rockwell Automation Products Application Technique, publication SECURE-AT001. Maximums assume that the processor is the target, not the originator.					
front port	• 2000 without CIP Security • 1500 with integrity • 900 with integrity and confidentiality				
backplane Controller performance not impacted by CIP Security™	• 4000 with multiple 1756-EN4TR modules				
backplane in Logix redundancy Controller performance not impacted by CIP Security™	• 2000				
Communication options	EtherNet/IP™, ControlNet®, DeviceNet®, Data Highway Plus™, Remote I/O, SERCOS and third-party process and device networks				
EtherNet/IP™ nodes supported max A node is an EtherNet/IP™ device that you add directly to the I/O configuration, and counts toward the node limits of the controller. For more information on EtherNet/IP™ nodes, see the ControlLogix® 5580 Controllers User Manual, publication 1756-UM543.	100 nodes	175 nodes	250 nodes	250 nodes	300 nodes Additional EtherNet/IP™ nodes may be possible depending on remaining controller resources
OPC UA nodes supported max An OPC UA node is a data structure, such as a single tag, that can be exchanged between industrial processes to external resources and applications. For more information on OPC UA nodes, see the OPC UA in 5580 and 5380 Controllers User Manual, publication 1756-UM023.	–	600 nodes	1200 nodes	10,000 nodes	15,000 nodes

Feature	1756-L81EXT	1756-L82EXT	1756-L83EXT	1756-L84EXT	1756-L85EXT
With Studio 5000 Logix Designer® application version 36.00.00 or later.					
Network connections per network module located in the local chassis	• ControlLogix® 5580 Controllers front EtherNet/IP™ port. • 1000 I/O; 528 EtherNet/IP™; 512 TCP (1756-EN4TR variant rated for harsh environments) • 256 EtherNet/IP™; 128 TCP (1756-EN2*x* variant rated for harsh environments) • 128 EtherNet/IP™; 64 TCP (1756-ENBT variant rated for harsh environments) • 100 ControlNet® (1756-CN2/A variant rated for harsh environments) • 40 ControlNet® (1756-CNB/D, 1756-CNB/E variant rated for harsh environments) • 128 ControlNet® (1756-CN2/B variant rated for harsh environments)				
Integrated motion	• SERCOS interface • Analog options (encoder input, LDT input, SSI input) • Integrated Motion on the EtherNet/IP™ network				
Controller redundancy	Full support with Studio 5000 Logix Designer® application version 33.00.02 or later When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet®, ControlNet®, RIO, Data Highway Plus™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015 .				
Programming languages	• Relay ladder logic (RLL) • Structured text • Function Block Diagram • Sequential function chart (SFC)				

ControlLogix-XT 5580 Controllers Technical Specifications

Attribute	1756-L81EXT	1756-L82EXT	1756-L83EXT	1756-L84EXT	1756-L85EXT
Standard memory	3 MB	5 MB	10 MB	20 MB	40 MB
Digital I/O, max	128,000				
Analog I/O, max	4000				
Total I/O, max	128,000				
Nonvolatile memory storage	4 GB Secure Digital (SD) card (1784-SD4XT) Larger versions may be available. **Important:** Memory cards are sold separately. For XT controllers, the installed memory card must remain in place to maintain the published XT corrosion specifications.				
Energy storage module	Embedded in controller, non-removable				
Number of power cycles	80,000				
Current draw @ 1.2V DC	5.0 mA				
Current draw @ 5.1V DC	1.20 A				
Power dissipation	6.2 W				

Attribute	1756-L81EXT	1756-L82EXT	1756-L83EXT	1756-L84EXT	1756-L85EXT
Thermal dissipation	21.2 BTU/hr				
Isolation voltage	50V (continuous), Basic Insulation type, USB port to backplane, Ethernet port to backplane, and USB port to Ethernet port. Compliant and tested according to IEC/UL 61010-1				
Weight, approx	0.394 kg (.868 lb)				
Slot width	1				
Module location	Chassis-based, any slot				
Chassis	1756-A7XT, 1756-A10XT, Series C 1756-A7ZXT, 1756-A10ZXT				
Power supply, standard	1756-PAXT, 1756-PBXT, 1756-PA30XT, 1756-PB30XT, 1756-PA72XT				
Power supply, redundant	—				
Wire category Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.	3 - on USB port 2 - on Ethernet ports				
Wire size	Ethernet connections: Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2				
Temperature code	T4				
Enclosure type rating	None (open-style)				

ControlLogix-XT 5580 Controllers Environmental Specifications

Attribute	1756-L81EXT/B, 1756-L82EXT/B, 1756-L83EXT/B, 1756-L84EXT/B, 1756-L85EXT/B	1756-L81EXT/C, 1756-L82EXT/C, 1756-L83EXT/C, 1756-L84EXT/C, 1756-L85EXT/C
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)	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤ +158 °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	5...95% noncondensing	

Attribute	1756-L81EXT/B, 1756-L82EXT/B, 1756-L83EXT/B, 1756-L84EXT/B, 1756-L85EXT/B	1756-L81EXT/C, 1756-L82EXT/C, 1756-L83EXT/C, 1756-L84EXT/C, 1756-L85EXT/C
IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)		
Conformal coated	Yes	
Corrosive Atmosphere • ASTM B845-97 Method K Accelerated Test (20-Day Exposure)	Severity Level G3 per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases 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. Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances 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. Up to 86.4 g/(m2·yr), mass loss of copper due to corrosion.	–
• ASTM B845-97 Method K Accelerated Test (30-Day Exposure) • Plus additional Rockwell Automation® proprietary accelerated corrosive environment test protocol for specific industries with sources of gaseous sulfur compounds.	–	Severity Level GX per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases 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. Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity. Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity.
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	
EFT/B Immunity	IEC 61000-4-4	
Surge Transient Immunity	IEC 61000-4-5	

Attribute	1756-L81EXT/B, 1756-L82EXT/B, 1756-L83EXT/B, 1756-L84EXT/B, 1756-L85EXT/B	1756-L81EXT/C, 1756-L82EXT/C, 1756-L83EXT/C, 1756-L84EXT/C, 1756-L85EXT/C
Conducted RF Immunity	IEC 61000-4-6	

ControlLogix-XT 5580 Controllers Certifications

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

Certification	1756-L81EXT, 1756-L82EXT, 1756-L83EXT, 1756-L84EXT, 1756-L85EXT
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.
FM	FM Approved Equipment for use in Class I Division 2 Group A, B, C, D Hazardous Locations
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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 60079-0; General Requirements • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • 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
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
EtherNet/IP™	ODVA conformance tested to EtherNet/IP™ specifications
CIP Security™	ODVA conformance tested to CIP Security™ specifications With Studio 5000 Logix Designer® application version 32.00.01 or later.

Certification	1756-L81EXT, 1756-L82EXT, 1756-L83EXT, 1756-L84EXT, 1756-L85EXT
TÜV certified for security	IEC 62443-4-2 SL1 With Studio 5000 Logix Designer® application version 32.00.01 or later.
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

ControlLogix-XT 5580 NSE Controllers

ControlLogix-XT 5580 NSE Controllers Technical Features

Feature	1756-L81E-NSEXT	1756-L82E-NSEXT	1756-L83E-NSEXT	1756-L84E-NSEXT	1756-L85E-NSEXT
Controller tasks	32 tasks, including a combination of one continuous, periodic, and event tasks 1000 programs per task				
Built-in communication ports When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet®, ControlNet®, RIO, Data Highway Plus™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.	1-port USB 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. Embedded Ethernet port				
USB port communication	USB 2.0 Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only				
Ethernet performance	10/100/1000 Mbps				
I/O Capacity (Class 0/1) - packets/second I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP™ Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number. For information on integrity and confidentiality, see the CIP Security™ with Rockwell Automation Products Application Technique, publication SECURE-AT001.	• 128,000 without CIP Security™ • 40,000 with integrity • 20,000 with integrity and confidentiality				

Feature	1756-L81E-NSEXT	1756-L82E-NSEXT	1756-L83E-NSEXT	1756-L84E-NSEXT	1756-L85E-NSEXT
Message Rate Capacity HMI/MSG (Class 3) - messages/second I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP™ Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number. For information on integrity and confidentiality, see the CIP Security™ with Rockwell Automation Products Application Technique, publication SECURE-AT001. Maximums assume that the processor is the target, not the originator.					
front port	• 2000 without CIP Security™ • 1500 with integrity • 900 with integrity and confidentiality				
backplane Controller performance not impacted by CIP Security™	• 4000 with multiple 1756-EN4TR modules				
backplane in Logix redundancy Controller performance not impacted by CIP Security™	• 2000				
Communication options	• EtherNet/IP™, ControlNet®,DeviceNet®, Data Highway Plus™, Remote I/O, SERCOS, and third-party process and device networks With Studio 5000 Logix Designer® application version 31.00.01 or later.				
EtherNet/IP™ nodes supported max	100 nodes	175 nodes	250 nodes	250 nodes	300 nodes Additional EtherNet/IP™ nodes may be possible depending on remaining controller resources
OPC UA nodes supported max	–	600 nodes	1200 nodes	10,000 nodes	15,000 nodes
Network connections per network module located in the local chassis	• ControlLogix® 5580 Controllers front EtherNet/IP™ port. • 1000 I/O; 528 EtherNet/IP™; 512 TCP (1756-EN4TR or variant rated for harsh environments) • 256 EtherNet/IP™; 128 TCP (1756-EN2x or variant rated for harsh environments) • 128 EtherNet/IP™; 64 TCP (1756-ENBT or variant rated for harsh environments) • 100 ControlNet® (1756-CN2/A or variant rated for harsh environments) • 40 ControlNet® (1756-CNB/D, 1756-CNB/E or variant rated for harsh environments) • 128 ControlNet® (1756-CN2/B or variant rated for harsh environments)				
Integrated motion	• SERCOS interface beginning with Studio 5000 Logix Designer® application version 31.00.01 or later • Analog options (encoder input, LDT input, SSI input) beginning with Studio 5000 Logix Designer® application version 31.00.01 or later • Integrated Motion on the EtherNet/IP™ network				
Controller redundancy	Full support with Studio 5000 Logix Designer® application version 33.00.02 or later				

Feature	1756-L81E-NSEXT	1756-L82E-NSEXT	1756-L83E-NSEXT	1756-L84E-NSEXT	1756-L85E-NSEXT
	When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet®, ControlNet®, RIO, Data Highway Plus™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.				
Programming languages	• Relay ladder logic (RLL) • Structured text • Function Block Diagram • Sequential function chart (SFC)				

ControlLogix-XT 5580 NSE Controllers Technical Specifications

Attribute	1756-L81E-NSEXT	1756-L82E-NSEXT	1756-L83E-NSEXT	1756-L84E-NSEXT	1756-L85E-NSEXT
Standard memory	3 MB	5 MB	10 MB	20 MB	40 MB
Digital I/O max	128,000				
Analog I/O max	4000				
Total I/O max	128,000				
Nonvolatile memory storage	4 GB Secure Digital (SD) card (1784-SD4XT) Larger versions may be available. **Important:** Memory cards are sold separately. For XT controllers, the installed memory card must remain in place to maintain the published XT corrosion specifications.				
Energy storage module	Embedded in controller, non-removable				
Number of power cycles	80,000				
Current draw @ 1.2V DC	5.0 mA				
Current draw @ 5.1V DC	1.20 A				
Power dissipation	6.2 W				
Thermal dissipation	21.2 BTU/hr				
Residual Stored Energy	Depletes to 400 microjoules in 40 seconds				
Isolation voltage	50V (continuous), Basic Insulation type, USB port to backplane, Ethernet port to backplane, and USB port to Ethernet port. Compliant and tested according to IEC/UL 61010-1				
Weight approx	0.394 kg (.868 lb)				
Slot width	1				
Module location	Chassis-based, any slot				
Chassis	1756-A7XT, 1756-A10XT, Series C				

Attribute	1756-L81E-NSEXT	1756-L82E-NSEXT	1756-L83E-NSEXT	1756-L84E-NSEXT	1756-L85E-NSEXT
	1756-A7ZXT, 1756-A10ZXT				
Power supply, standard	1756-PAXT, 1756-PBXT, 1756-PA30XT, 1756-PB30XT, 1756-PA72XT				
Power supply, redundant	—				
Wire category Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.	3 - on USB port 2 - on Ethernet ports				
Wire size	Ethernet connections: Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2				
Temperature code	T4				
Enclosure type rating	None (open-style)				

ControlLogix-XT 5580 NSE Controllers Environmental Specifications

Attribute	1756-L81E-NSEXT, 1756-L82E-NSEXT, 1756-L83E-NSEXT, 1756-L84E-NSEXT, 1756-L85E-NSEXT
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)	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤ +158 °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	Yes
Corrosive Atmosphere • ASTM B845-97 Method K Accelerated Test (30-Day Exposure) • Plus additional Rockwell Automation® proprietary accelerated corrosive environment test protocol for specific industries with sources of gaseous sulfur compounds.	Severity Level GX(1)(2) per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases 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. Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity. Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances 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.

Attribute	1756-L81E-NSEXT, 1756-L82E-NSEXT, 1756-L83E-NSEXT, 1756-L84E-NSEXT, 1756-L85E-NSEXT
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
EFT/B Immunity	IEC 61000-4-4
Surge Transient Immunity	IEC 61000-4-5
Conducted RF Immunity	IEC 61000-4-6

ControlLogix-XT 5580 NSE Controllers Certifications

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

Certification	1756-L81E-NSEXT, 1756-L82E-NSEXT, 1756-L83E-NSEXT, 1756-L84E-NSEXT, 1756-L85E-NSEXT
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.
FM	FM Approved Equipment for use in Class I Division 2 Group A, B, C, D Hazardous Locations
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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 60079-0; General Requirements • IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X

Certification	1756-L81E-NSEXT, 1756-L82E-NSEXT, 1756-L83E-NSEXT, 1756-L84E-NSEXT, 1756-L85E-NSEXT
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
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
EtherNet/IP™	ODVA conformance tested to EtherNet/IP™ specifications
CIP Security™	ODVA conformance tested to CIP Security™ specifications With Studio 5000 Logix Designer® application version 32.00.01 or later.
TÜV certified for security	IEC 62443-4-2 SL1 Certifications - ControlLogix® 5580 Standard and Conformal Coated Controllers With Studio 5000 Logix Designer® application version 32.00.01 or later.
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

ControlLogix-XT 5580 Process Controllers

The ControlLogix-XT™ 5580 process controllers function in the same way as traditional ControlLogix® process controllers. The ControlLogix® process controllers provide extended protection in corrosive gas environments to a greater extent and can be used in temperature extremes from -25...+70 °C (-13...+158 °F) when deployed as part of a Logix-XT system.

ControlLogix-XT 5580 Process Controllers Technical Features

Feature	1756-L81EPXT	1756-L83EPXT	1756-L85EPXT
Controller tasks	32 tasks, including a combination of one continuous, periodic, and event tasks 1000 programs per task		
Built-in communication ports When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet®, ControlNet®, RIO, Data Highway Plus™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.	1 port USB 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. Embedded Ethernet port		

Feature	1756-L81EPXT	1756-L83EPXT	1756-L85EPXT
USB port communication	USB 2.0 Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only		
Ethernet performance	10/100/1000 Mbps		
I/O Capacity (Class 0/1) - packets/second I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP™ Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number. For information on integrity and confidentiality, see the CIP Security™ with Rockwell Automation Products Application Technique, publication SECURE-AT001 .	• 128,000 without CIP Security™ • 40,000 with integrity • 20,000 with integrity and confidentiality		
Message Rate Capacity HMI/MSG (Class 3) - messages/second I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP™ Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number. For information on integrity and confidentiality, see the CIP Security™ with Rockwell Automation Products Application Technique, publication SECURE-AT001. Maximums assume that the processor is the target, not the originator.			
front port	• 2000 without CIP Security™ • 1500 with integrity • 900 with integrity and confidentiality		
backplane Controller performance not impacted by CIP Security™	• 4000 with multiple 1756-EN4TR modules		
backplane in Logix redundancy Controller performance not impacted by CIP Security™	• 2000		
Communication options	• EtherNet/IP™, ControlNet®,DeviceNet®, Data Highway Plus™, Remote I/O, SERCOS, and third-party process and device networks With Studio 5000 Logix Designer® application version 31.00.01 or later.		
EtherNet/IP™ nodes supported, max	100 nodes	250 nodes	300 nodes

Feature	1756-L81EPXT	1756-L83EPXT	1756-L85EPXT
OPC UA nodes supported max	–	1200 nodes	15,000 nodes
Network connections per network module located in the local chassis	• ControlLogix® 5580 Controllers front EtherNet/IP™ port. • 1000 I/O; 528 EtherNet/IP™; 512 TCP (1756-EN4TR or variant rated for harsh environments) • 256 EtherNet/IP™; 128 TCP (1756-EN2*x* or variant rated for harsh environments) • 128 EtherNet/IP™; 64 TCP (1756-ENBT or variant rated for harsh environments) • 100 ControlNet® (1756-CN2/A or variant rated for harsh environments) • 40 ControlNet® (1756-CNB/D, 1756-CNB/E or variant rated for harsh environments) • 128 ControlNet® (1756-CN2/B or variant rated for harsh environments)		
Integrated motion	• SERCOS interface • Analog options (encoder input, LDT input, SSI input) • Integrated Motion on the EtherNet/IP™ network		
Controller redundancy	Full support with Studio 5000 Logix Designer® application version 33.00.00 or later.		
Programming languages	• Relay Ladder Logic (RLL) • Structured Text • Function Block Diagram • Sequential Function Chart (SFC)		

ControlLogix-XT 5580 Process Controllers Technical Specifications

Attribute	1756-L81EPXT	1756-L83EPXT	1756-L85EPXT
Standard memory	3 MB	10 MB	40 MB
Digital I/O, max	128,000		
Analog I/O, max	4000		
Total I/O, max	128,000		
Nonvolatile memory storage	4 GB Secure Digital (SD) card (1784-SD4XT) Larger versions may be available. **Important:** Memory cards are sold separately. For XT controllers, the installed memory card must remain in place to maintain the published XT corrosion specifications.		
Energy storage module	Embedded in controller, non-removable		
Number of power cycles	80,000		
Current draw @ 1.2 V DC	5.0 mA		
Current draw @ 5.1 V DC	1.20 A		
Power dissipation	6.2 W		
Thermal dissipation	21.2 BTU/hr		

Attribute	1756-L81EPXT	1756-L83EPXT	1756-L85EPXT
Isolation voltage	50 V (continuous), basic insulation type; USB port to backplane, Ethernet port to backplane, and USB port to Ethernet port. Compliant and tested according to IEC/UL 61010-1.		
Weight, approx.	0.394 kg (0.868 lb)		
Slot width	1		
Module location	Chassis-based, any slot		
Chassis	1756-A7XT, 1756-A10XT, Series C 1756-A7ZXT, 1756-A10ZXT		
Power supply, standard	1756-PAXT, 1756-PBXT, 1756-PA30XT, 1756-PB30XT, 1756-PA72XT		
Power supply, redundant	—		
Wire category Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.	3 - on USB port 2 - on Ethernet ports		
Wire size	Ethernet connections: Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2		
Temperature code	T4		
Enclosure type rating	None (open-style)		

ControlLogix-XT 5580 Controllers Process Environmental Specifications

Attribute	1756-L81EPXT, 1756-L83EPXT, 1756-L85EPXT
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)	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤ +158 °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

Attribute	1756-L81EPXT, 1756-L83EPXT, 1756-L85EPXT
Conformal coated	Yes
Corrosive Atmosphere • ASTM B845-97 Method K Accelerated Test (30-Day Exposure) • Plus additional Rockwell Automation® proprietary accelerated corrosive environment test protocol for specific industries with sources of gaseous sulfur compounds.	Severity Level GX(1)(2) per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases 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. Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity. Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances 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.
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
EFT/B Immunity	IEC 61000-4-4
Surge Transient Immunity	IEC 61000-4-5
Conducted RF Immunity	IEC 61000-4-6

ControlLogix-XT 5580 Process Controllers Certifications

See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details. You can use these accessories with ControlLogix® 5580 controllers.

Certification	1756-L81EPXT, 1756-L83EPXT, 1756-L85EPXT
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.
FM	FM Approved Equipment for use in Class I Division 2 Group A, B, C, D Hazardous Locations
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions

Certification	1756-L81EPXT, 1756-L83EPXT, 1756-L85EPXT
ATEX	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 60079-0; General Requirements • IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" • 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
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
EtherNet/IP™	ODVA conformance tested to EtherNet/IP™ specifications
CIP Security™	ODVA conformance tested to CIP Security™ specifications
TÜV certified for security	IEC 62443-4-2 SL1
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

ControlLogix 5580 Controller Accessories

You can use these accessories with ControlLogix® 5580 controllers.

Memory Cards

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

IMPORTANT: Memory cards are sold separately. For XT controllers, the installed memory card must remain in place to maintain the published XT corrosion specifications.

Through custom application code in the Logix Designer application, you can manually trigger the controller to save to or load tag data from nonvolatile memory or configure the controller to load from nonvolatile memory on powerup.

Table 4. 1784 Memory Cards Compatible with ControlLogix 5580 Technical Specifications

Attribute	1784-SD1	1784-SD2	1784-SD4	1784-SDHC8	1784-SDHC32	1784-SD4XT
Type	Secure Digital (SD) card					
Memory	1 GB	2 GB	4 GB	8 GB	32 GB	4 GB
Supported controllers	1756-L81E, 1756-L81EK, 1756-L82E, 1756-L82EK, 1756-L83E, 1756-L83EK 1756-L84E, 1756-L84EK, 1756-L85E, 1756-L85EK 1756-L81E-NSE, 1756-L82E-NSE, 1756-L83E-NSE, 1756-L84E-NSE, 1756-L85E-NSE					1756-L81EXT, 1756-L82EXT 1756-L83EXT, 1756-L84EXT, 1756-L85EXT 1756-L81E-NSEXT, 1756-L82E-NSEXT, 1756-L83E-NSEXT 1756-L84E-NSEXT, 1756-L85E-NSEXT 1756-L81EP, 1756-L83EP, 1756-L85EP 1756-L81EPXT, 1756-L83EPXT, 1756-L85EPXT
Weight, approx.	1.76 g (0.06 oz)					

Ethernet and USB Port Protection Plugs

ControlLogix® 5580 controllers with a 'K' or 'XT' in the catalog number, ControlLogix® 5580 NSE controllers, ControlLogix® 5580 Process controllers are shipped with port protection plugs installed to provide a degree of protection from corrosive atmospheres.

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

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 5580 Controllers

Figure 4. GuardLogix 5580 Controller with Safety Partner



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.

With a GuardLogix® 5580 controller, up to SIL 2/PLd (Category 3) can be achieved with one controller and using the safety task and safety I/O.

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 5000® 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® 5580 controllers with a 'K' or 'XT' in the catalog number have conformal coating that adds a degree of protection against harsh, corrosive gas environments.

ATTENTION: Conformal Coated Products

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 remain installed in all unoccupied ports and memory cards must remain installed 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, but must 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.

Logix SIS

With the Studio 5000 Logix Designer® application version 37 and later, you can use GuardLogix® 5580 controllers in a redundant configuration without a safety partner. In Logix SIS, GuardLogix® 5580 controllers can achieve up to SIL 3/PLe (Category 3). For more information, see the Logix SIS Safety Reference Manual, 1756-RM015 .

Figure 5. GuardLogix® 5580 controllers





GuardLogix 5580 Standard and Conformal Coated Controllers

GuardLogix 5580 Standard and Conformal Coated Controllers Technical Features

Feature	1756-L81ES, 1756-L81ESK	1756-L82ES, 1756-L82ESK	1756-L83ES, 1756-L83ESK	1756-L84ES, 1756-L84ESK	1756-L85ES	1756-L8SP, 1756-L8SPK
Controller tasks	31 standard tasks, 1 safety task 1000 programs per task (Ethernet port)					–
Built-in communication ports With Studio 5000 Logix Designer® application version 30.00.00 or later.	1-port USB 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. Embedded Ethernet port					–
USB port communication	USB 2.0 Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only					–
Ethernet performance	10/100/1000 Mbps					–
I/O Capacity (Class 0/1) – packets/second I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number. For information on integrity and confidentiality, see the CIP Security™ with Rockwell Automation Products Application Technique, publication SECURE-AT001.	• 128,000 without CIP Security™ • 40,000 with integrity • 20,000 with integrity and confidentiality					–

Message Rate Capacity HMI/MSG (Class 3) - messages/second

I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number.

For information on integrity and confidentiality, see the CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001.

Feature	1756-L81ES, 1756-L81ESK	1756-L82ES, 1756-L82ESK	1756-L83ES, 1756-L83ESK	1756-L84ES, 1756-L84ESK	1756-L85ES	1756-L8SP, 1756-L8SPK
Maximums assume that the processor is the target, not the originator.						
front port without safety partner	• 2000 without CIP Security™ • 1500 with integrity • 900 with integrity and confidentiality					–
front port with safety partner	• 1000 without CIP Security™ • 750 with integrity • 450 with integrity and confidentiality					–
backplane without safety partner Controller performance not impacted by CIP Security™.	• 4000 with multiple 1756-EN4TR modules					–
backplane with safety partner Controller performance not impacted by CIP Security™.	• 2000					–
backplane with Logix SIS Controller performance not impacted by CIP Security™.	• 2000					–
Communication options	• EtherNet/IP™ • ControlNet® • DeviceNet® • Data Highway Plus™ • Remote I/O • SERCOS • Third-party process and device networks					–
EtherNet/IP™ nodes supported max An EtherNet/IP™ node is a device that you add directly to the I/O configuration, and counts toward the node limits of the controller. For more information on EtherNet/IP™ nodes, see the ControlLogix®5580 Controllers User Manual, publication 1756-UM543.	100 nodes	175 nodes	250 nodes	250 nodes	300 nodes Additional EtherNet/IP™ nodes may be possible depending on remaining controller resources	–
OPC UA nodes supported max An OPC UA node is a data structure, such as a single tag, that can be exchanged between industrial processes to external resources and applications. For more information on OPC UA nodes, see the OPC UA in 5580 and 5380 Controllers User Manual, publication 1756-UM023.	–	900	1500	15000	15000	–

Feature	1756-L81ES, 1756-L81ESK	1756-L82ES, 1756-L82ESK	1756-L83ES, 1756-L83ESK	1756-L84ES, 1756-L84ESK	1756-L85ES	1756-L8SP, 1756-L8SPK
With Studio 5000 Logix Designer® application version 36.00.00 or later.						
Network connections per network module in the local chassis	• ControlLogix® 5580 Controllers front EtherNet/IP™ port. • 1000 I/O; 528 EtherNet/IP™; 512 TCP (1756-EN4TR or variant rated for harsh environments) • 256 EtherNet/IP™; 128 TCP (1756-EN2x or variant rated for harsh environments) • 128 EtherNet/IP™; 64 TCP (1756-ENBT or variant rated for harsh environments) • 100 ControlNet® (1756-CN2/A or variant rated for harsh environments) • 40 ControlNet® (1756-CNB/D, 1756-CNB/E or variant rated for harsh environments) • 128 ControlNet® (1756-CN2/B or variant rated for harsh environments)					–
Controller redundancy	Full support with Studio 5000 Logix Designer® application version 37.00.00 or later					–
Integrated motion	• SERCOS interface • Analog options (encoder input, LDT input, SSI input) • Integrated Motion on the EtherNet/IP™ network					–
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)					–

GuardLogix 5580 Standard and Conformal Coated Controllers Technical Specifications

Attribute	1756-L81ES, 1756-L81ESK	1756-L82ES, 1756-L82ESK	1756-L83ES,1756-L83ESK	1756-L84ES,1756-L84ESK	1756-L85ES	1756-L8SP, 1756-L8SPK
Standard memory	3 MB	5 MB	10 MB	20 MB	40 MB	–
Safety memory	1.5 MB	2.5 MB	5 MB	6 MB	3 MB	Configured to match primary controller
Digital I/O, max	128,000					–
Analog I/O, max	4000					–
Total I/O, max	128,000					–
Nonvolatile memory storage	4 GB Secure Digital Card (1784-SD4) Larger versions may be available. **Important:** Memory cards are sold separately.					–
Energy storage module	Embedded in controller, non-removable					
Number of power cycles	80,000					
Current draw @ 1.2V DC	5.0 mA					

Attribute	1756-L81ES, 1756-L81ESK	1756-L82ES, 1756-L82ESK	1756-L83ES,1756-L83ESK	1756-L84ES,1756-L84ESK	1756-L85ES	1756-L8SP, 1756-L8SPK
Current draw @ 5.1V DC	1.20 A					
Power dissipation	6.2 W					
Thermal dissipation	21.2 BTU/hr					
Isolation voltage	50 V (continuous), Basic Insulation type, Ethernet to backplane, USB to backplane, and USB to Ethernet. Compliant and tested according to IEC/UL 61010-1					–
Weight, approx	0.394 kg (0.868 lb)					
Slot width	1					
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, Series B and Series C					
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 Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1. .	3 – on USB port 2 – on Ethernet ports					–
Wire size	Ethernet connections: Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2					–
Temperature code	T4					
Enclosure type rating	None (open-style)					

GuardLogix 5580 Standard and Conformal Coated Controllers Environmental Specifications

Attribute	1756-L81ES, 1756-L82ES, 1756-L83ES, 1756-L84ES, 1756-L85ES	1756-L81ESK, 1756-L82ESK, 1756-L83ESK, 1756-L84ESK, 1756-L8SP, 1756-L8SPK
Temperature, operating (SIL 2/PLd) 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) for Series C chassis 0 °C ≤ Ta ≤ +50 °C (+32 °F ≤ Ta ≤ +122 °F) for Series B chassis **Note:** If operating above +55 °C (+131 °F), modules greater than 6.2 W shall not be installed in slots adjacent to the controller.	

Attribute	1756-L81ES, 1756-L82ES, 1756-L83ES, 1756-L84ES, 1756-L85ES	1756-L81ESK, 1756-L82ESK, 1756-L83ESK, 1756-L84ESK, 1756-L8SP, 1756-L8SPK
Temperature, operating (SIL 3/PLe) 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) for Series C chassis 0 °C ≤ Ta ≤ +50 °C (+32 °F ≤ Ta ≤ +122 °F) for Series B chassis	
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), chassis Series B and C	
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing	
Conformal coated	No	Yes
Corrosive Atmosphere ASTM B845-97 Method K Accelerated Test (20-Day Exposure)	—	Severity Level G3 per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases 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 Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances Up to 86.4 g/(m2·yr), mass loss of copper due to corrosion.
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	
EFT/B Immunity	IEC 61000-4-4	
Surge Transient Immunity	IEC 61000-4-5	
Conducted RF Immunity	IEC 61000-4-6	

GuardLogix 5580 Standard and Conformal Coated Controllers Certifications

See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

Certification	1756-L81ES, 1756-L82ES, 1756-L83ES, 1756-L84ES, 1756-L85ES, 1756-L81ESK, 1756-L82ESK, 1756-L83ESK, 1756-L84ESK, 1756-L8SP, 1756-L8SPK
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.
FM	FM Approved Equipment for use in Class I Division 2 Group A, B, C, D Hazardous Locations
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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 60079-0; General Requirements • IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" • 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
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
Product safety function (MD)	• Up to Cat. 3/PLd according to EN ISO 13849-1 and SIL CL 2 according to EN/IEC 62061 • Up to Cat. 4/PLe according to EN ISO 13849-1 and SIL CL 3 according to EN/IEC 62061 when used in combination with the 1756-L8SP safety partner
TÜV certified for functional safety When used with specified firmware revisions. See the Product Safety Certificate at	• Capable of Cat. 4/PLe according to EN ISO 13849-1 and SIL 3 according to EN 62061/IEC 61508 when used as described in the GuardLogix® 5580 and Compact GuardLogix® 5580 Controllers Safety Reference Manual, publication 1756-RM012. • Capable of Cat. 3/PLe according to EN ISO 13849-1 and SIL 3 according to EN 62061/IEC 61508 when used as described in the Logix SIS Safety Reference Manual, publication 1756-RM015. • TÜV 01/205/5611

Certification	1756-L81ES, 1756-L82ES, 1756-L83ES, 1756-L84ES, 1756-L85ES, 1756-L81ESK, 1756-L82ESK, 1756-L83ESK, 1756-L84ESK, 1756-L8SP, 1756-L8SPK
rok.auto/certifications for a full list of safety-related certifications.	
CIP Security™	ODVA conformance tested to CIP Security™specifications
TÜV certified for security	IEC 62443-4-2 SL1
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

GuardLogix-XT 5580 Controllers

The GuardLogix-XT™ 5580 controllers function just like GuardLogix® 5580 controllers. A GuardLogix-XT™ 5580 primary controller can achieve up to SIL 2 safety integrity. To achieve up to SIL 3 safety integrity, pair a GuardLogix® 5580 primary controller with a GuardLogix® safety partner. GuardLogix® 5580 controllers are conformal coated to add a degree of protection against harsh, corrosive gas environments.

GuardLogix-XT 5580 Technical Features

Feature	1756-L81EXTS, 1756-L81ESXT	1756-L82EXTS, 1756-L82ESXT	1756-L83EXTS, 1756-L83ESXT	1756-L84EXTS, 1756-L84ESXT	1756-L8XTSP, 1756-L8SPXT
Controller tasks	31 standard tasks, 1 safety task, 1000 programs per task, Ethernet port				–
Built-in communication ports	1-port USB 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. Embedded Ethernet port				–
USB port communication	USB 2.0 Full speed (12 Mbps) Programming, configuration, firmware update, and online edits only				–
Ethernet performance	10/100/1000 Mbps				–
I/O Capacity (Class 0/1) – packets/second I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG	• 128,000 without CIP Security™ • 40,000 with integrity • 20,000 with integrity and confidentiality				–

Feature	1756-L81EXTS, 1756-L81ESXT	1756-L82EXTS, 1756-L82ESXT	1756-L83EXTS, 1756-L83ESXT	1756-L84EXTS, 1756-L84ESXT	1756-L8XTSP, 1756-L8SPXT
numbers are maximums, they assume no I/O. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP™ Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number. For information on integrity and confidentiality, see the CIP Security™ with Rockwell Automation Products Application Technique, publication SECURE-AT001.					
Message rate capacity HMI/MSG (Class 3) - messages/second					
front port without safety partner	• 2000 without CIP Security • 1500 with integrity • 900 with integrity and confidentiality				–
front port with safety partner	• 1000 without CIP Security • 750 with integrity • 450 with integrity and confidentiality				–
backplane without safety partner Controller performance not impacted by CIP Security™.	• 4000 with multiple 1756-EN4TR modules				–
backplane with safety partner Controller performance not impacted by CIP Security™.	• 2000				–
backplane with Logix SIS Controller performance not impacted by CIP Security™.	• 2000				–
Communication options	• EtherNet/IP™ • ControlNet© • DeviceNet© • Data Highway Plus™ • Remote I/O • SERCOS • Third-party process and device networks				–
EtherNet/IP™ nodes supported max An EtherNet/IP™ node is a device that you add directly to the I/O configuration, and counts toward the node limits of the controller. For more information on EtherNet/IP™ nodes, see the ControlLogix©5580	100 nodes	175 nodes	250 nodes	250 nodes	–

Feature	1756-L81EXTS, 1756-L81ESXT	1756-L82EXTS, 1756-L82ESXT	1756-L83EXTS, 1756-L83ESXT	1756-L84EXTS, 1756-L84ESXT	1756-L8XTSP, 1756-L8SPXT
Controllers User Manual, publication 1756-UM543.					
OPC UA nodes supported max An OPC UA node is a data structure, such as a single tag, that can be exchanged between industrial processes to external resources and applications. For more information on OPC UA nodes, see the OPC UA in 5580 and 5380 Controllers User Manual, publication 1756-UM023. With Studio 5000 Logix Designer® application version 36.00.00 or later.	–	900	1500	15000	–
Network connections per network module in the local chassis	• ControlLogix® 5580 Controllers front EtherNet/IP™ port. • 1000 I/O; 528 EtherNet/IP™; 512 TCP (1756-EN4TR or variant rated for harsh environments) • 256 EtherNet/IP™; 128 TCP (1756-EN2x or variant rated for harsh environments) • 128 EtherNet/IP™; 64 TCP (1756-ENBT or variant rated for harsh environments) • 100 ControlNet® (1756-CN2/A or variant rated for harsh environments) • 40 ControlNet® (1756-CNB/D, 1756-CNB/E or variant rated for harsh environments) • 128 ControlNet® (1756-CN2/B or variant rated for harsh environments)				–
Controller redundancy	Full support with Studio 5000 Logix Designer® application version 37.00.00 or later When the controller is enabled for redundancy, the safety partner is not supported, the Ethernet port is off, Integrated motion is not supported, and DeviceNet®, ControlNet®, RIO, Data Highway Plus™ networks are not supported. For details, see the Redundancy Systems User Manual, publication 1756-UM015.				–
Integrated motion	• SERCOS interface • Analog options (encoder input, LDT input, SSI input) • Integrated Motion on the EtherNet/IP™ network				–
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), and Sequential Function Chart (SFC).				–

GuardLogix-XT 5580 Controllers Technical Specifications

Attribute	1756-L81EXTS, 1756-L81ESXT	1756-L82EXTS, 1756-L82ESXT	1756-L83EXTS, 1756-L83ESXT	1756-L84EXTS, 1756-L84ESXT	1756-L8XTSP, 1756-L8SPXT
Standard memory	3 MB	5 MB	10 MB	20 MB	–
Safety memory	1.5 MB	2.5 MB	5 MB	6 MB	Configured to match primary controller
Digital I/O, max	128,000				–
Analog I/O, max	4000				–

Attribute	1756-L81EXTS, 1756-L81ESXT	1756-L82EXTS, 1756-L82ESXT	1756-L83EXTS, 1756-L83ESXT	1756-L84EXTS, 1756-L84ESXT	1756-L8XTSP, 1756-L8SPXT
Total I/O, max	128,000				—
Nonvolatile memory storage	4 GB Secure Digital Card (1784-SD4) Larger versions may be available. **Important:** Memory cards are sold separately. For XT controllers, the installed memory card must remain in place to maintain the published XT corrosion specifications.				—
Energy storage module	Embedded in controller, non-removable				
Number of power cycles	80,000				
Current draw @ 1.2 V DC	5.0 mA				
Current draw @ 5.1 V DC	1.20 A				
Power dissipation	6.2 W				
Thermal dissipation	21.2 BTU/hr				
Isolation voltage	50 V (continuous), Basic Insulation type, Ethernet to backplane, USB to backplane, and USB to Ethernet. Compliant and tested according to IEC/UL 61010-1				—
Weight, approx	0.394 kg (0.868 lb)				
Slot width	1				
Module location	Chassis-based, any slot				Chassis slot immediately to the right of the primary controller
Chassis	1756-A7XT, 1756-A10XT, Series C 1756-A7ZXT, 1756-A10ZXT				
Power supply, standard	1756-PAXT, 1756-PBXT, 1756-PA30XT, 1756-PB30XT, 1756-PA72XT				
Power supply, redundant	—				
Wire category Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.	3 – on USB port 2 – on Ethernet ports				—
Wire size	Ethernet connections: Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2				—
Temperature code	T4				
Enclosure type rating	None (open-style)				

GuardLogix-XT 5580 Controllers Environmental Specifications

Attribute	1756-L81EXTS, 1756-L82EXTS, 1756-L83EXTS, 1756-L84EXTS, 1756-L8XTSP	1756-L81ESXT, 1756-L82ESXT, 1756-L83ESXT, 1756-L84ESXT, 1756-L8SPXT
Temperature, operating (SIL 2/PLd) 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)	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤ +158 °F) Note: If operating above +65 °C (+149 °F), modules greater than 6.2 W shall not be installed in slots next to the controller.	
Temperature, operating (SIL 3/PLe) 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)	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤ +158 °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	Yes	
Corrosive Atmosphere • ASTM B845-97 Method K Accelerated Test (20-Day Exposure)	Severity Level G3 per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases 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 Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances 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. Up to 86.4 g/(m2·yr), mass loss of copper due to corrosion.	—
• ASTM B845-97 Method K Accelerated Test (30-Day Exposure) • Plus additional Rockwell Automation® proprietary accelerated corrosive environment test protocol for specific industries with sources of gaseous sulfur compounds.	—	Severity Level GX per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases 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. Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity.

Attribute	1756-L81EXTS, 1756-L82EXTS, 1756-L83EXTS, 1756-L84EXTS, 1756-L8XTSP	1756-L81ESXT, 1756-L82ESXT, 1756-L83ESXT, 1756-L84ESXT, 1756-L8SPXT
		Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances 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.
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	
EFT/B Immunity	IEC 61000-4-4	
Surge Transient Immunity	IEC 61000-4-5	
Conducted RF Immunity	IEC 61000-4-6	

GuardLogix-XT 5580 Certifications

See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

Certification	1756-L81EXTS, 1756-L82EXTS, 1756-L83EXTS, 1756-L84EXTS, 1756-L8XTSP
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.
FM	FM Approved Equipment for use in Class I Division 2 Group A, B, C, D Hazardous Locations.
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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

Certification	1756-L81EXTS, 1756-L82EXTS, 1756-L83EXTS, 1756-L84EXTS, 1756-L8XTSP
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
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
Product safety function (MD)	• Up to Cat. 3/PLd according to EN ISO 13849-1 and SIL CL 2 according to EN/IEC 62061 • Up to Cat. 4/PLe according to EN ISO 13849-1 and SIL CL 3 according to EN/IEC 62061 when used with the 1756-L8SP safety partner
TÜV certified for functional safety When used with specified firmware revisions. See the Product Safety Certificate at rok.auto/certifications for a full list of safety-related certifications	• Capable of Cat. 4/PLe according to EN ISO 13849-1 and SIL 3 according to EN 62061/IEC 61508 when used as described in the GuardLogix® 5580 and Compact GuardLogix® 5580 Controllers Safety Reference Manual, publication 1756-RM012. • Capable of Cat. 3/PLe according to EN ISO 13849-1 and SIL 3 according to EN 62061/IEC 61508 when used as described in the Logix SIS Safety Reference Manual, publication 1756-RM015. • TÜV 01/205/5611
CIP Security™	ODVA conformance tested to CIP Security™ specifications With Studio 5000 Logix Designer® application version 34.00.01 or later.
TÜV certified for security	IEC 62443-4-2 SL1
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

GuardLogix 5580 Controller Accessories

You can use these accessories with GuardLogix® 5580 controllers.

Memory Cards

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

IMPORTANT: Memory cards are sold separately. For XT controllers, the installed memory card must remain in place to maintain the published XT corrosion specifications.

Through custom application code in the Logix Designer application, you can manually trigger the controller to save to or load tag data from nonvolatile memory or configure the controller to load from nonvolatile memory on powerup.

1784 Memory Cards Compatible with GuardLogix 5580 Technical Specifications

Attribute	1784-SD1	1784-SD2	1784-SD4	1784-SDHC8	1784-SDHC32	1784-SD4XT
Type	Secure Digital (SD) card					
Memory	1 GB	2 GB	4 GB	8 GB	32 GB	4 GB
Supported controllers	1756-L81ES, 1756-L81ESK					1756-L81ESXT, 1756-L81EXTS
	1756-L82ES, 1756-L82ESK					1756-L82ESXT, 1756-L82EXTS
	1756-L83ES, 1756-L83ESK					1756-L83ESXT, 1756-L83EXTS
	1756-L84ES, 1756-L84ESK					1756-L84ESXT, 1756-L84EXTS
	1756-L85ES					1756-L85EXT
Weight, approx	1.76 g (0.06 oz)					

Ethernet and USB Port Protection Plugs

GuardLogix® 5580 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.

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 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.

ControlLogix 5570 Controllers

Figure 6. ControlLogix 5570 Controller



The ControlLogix® 5570 controller provides a scalable solution that is capable of addressing many I/O points. You can place the controller into any slot of a ControlLogix® I/O chassis, and install multiple controllers in the same chassis.

ControlLogix® 5570 controllers can monitor and control I/O across the ControlLogix® backplane, and over network links. To provide communication for these controllers, install the appropriate communication interface module into the local chassis.

ControlLogix® 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.

ATTENTION: Conformal Coated Products

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 remain installed in all unoccupied ports and memory cards must remain installed 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, but must be reinstalled after temporary access is complete.

IMPORTANT: When a ControlLogix® 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 ControlLogix-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.

ControlLogix 5570 Standard and Conformal Coated Controllers

ControlLogix 5570 Standard and Conformal Coated Technical Features

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/task 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 Studio 5000 Logix Designer® application, version 24.00.00
Built-in communication ports	1-port USB 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.
Communication options	• EtherNet/IP™ • ControlNet®

Feature	1756-L71, 1756-L71K, 1756-L72, 1756-L72K, 1756-L73, 1756-L73K, 1756-L74, 1756-L74K, 1756-L75, 1756-L75K
	• 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 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.	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)

ControlLogix 5570 Standard and Conformal Coated Technical Specifications

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) Larger versions may be available. **Important:** Memory cards are sold separately.				
Digital I/O max	128,000				
Analog I/O max	4000				

Attribute	1756-L71, 1756-L71K	1756-L72, 1756-L72K	1756-L73, 1756-L73K	1756-L74, 1756-L74K	1756-L75, 1756-L75K
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 @ 1.2 V DC	5 mA				
Current draw @ 5.1 V DC	800 mA				
Power dissipation	2.5 W				
Thermal dissipation	8.5 BTU/hr				
Isolation voltage	30 V (continuous), basic insulation type, USB port-to-system. Compliant and tested according to IEC/UL 61010-1				
USB port 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.	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 Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.	3 – on USB port				
Temperature code	T4				
Enclosure type rating	None (open-style)				

ControlLogix 5570 Standard and Conformal Coated Environmental Specifications

Attribute	1756-L71, 1756-L72, 1756-L73, 1756-L74, 1756-L75	1756-L71K, 1756-L72K, 1756-L73K, 1756-L74K, 1756-L75K
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 K Accelerated Test (20-Day Exposure)	—	Severity Level G3 per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases 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. Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances Up to 86.4 g/(m2·yr), mass loss of copper due to corrosion.
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	
EFT/B Immunity	IEC 61000-4-4	
Conducted RF Immunity	IEC 61000-4-6	

ControlLogix 5570 Standard and Conformal Coated Certifications

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

Certification	1756-L71, 1756-L71K, 1756-L72, 1756-L72K, 1756-L73, 1756-L73K, 1756-L74, 1756-L74K, 1756-L75, 1756-L75K
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 and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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
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
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

ControlLogix-XT 5570 Controller

1756-L73XT Controller Technical Specifications

Attribute	1756-L73XT
User memory	8 MB

Attribute	1756-L73XT
I/O memory	0.98 MB
Nonvolatile memory storage	1 GB Secure Digital (SD) card (1784-SD1) Larger versions may be available. **Important:** Memory cards are sold separately. For XT controllers, the installed memory card must remain in place to maintain the published XT corrosion specifications.
Digital I/O, max	128,000
Analog I/O, max	4000
Total I/O, max	128,000
Replacement battery	—
Energy storage modules	• 1756-ESMCAPXT capacitor energy storage module (removable, ships installed with every controller) • 1756-ESMNSEXT capacitor energy storage module (removable, no residual WallClockTime power backup) • 1756-ESMNRMXT capacitor energy storage module (non-removable, prevents USB connection and SD card use to help secure the controller)
Current draw @ 5.1 V DC	800 mA
Current draw @ 1.2 V DC	5 mA
Power dissipation	2.5 W
Thermal dissipation	8.5 BTU/hr
Isolation voltage	30 V (continuous), basic insulation type, USB port to backplane. Compliant and tested according to IEC/UL 61010-1
USB port 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.	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	For extended temperature applications, use 1756-A7XT and 1756-A10XT, Series C For extended temperature and corrosive atmosphere applications, use 1756-A7ZXT and 1756-A10ZXT For low temperature and corrosive atmosphere applications only, use 1756-A4K, 1756-A7K, 1756-A10K, 1756-A13K, 1756-A17K
Power supply, standard	1756-PAXT, 1756-PA30XT, 1756-PBXT, 1756-PB30XT
Power supply, redundant	1756-PAXTR, 1756-PBXTR

Attribute	1756-L73XT
Wire category Use this conductor category information to plan conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.	3 – on USB ports
Temperature code	T4
Enclosure type rating	None (open-style)

1756-L73XT Controller Environmental Specifications

Attribute	1756-L73XT
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)	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤ +158 °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	Yes
Corrosive Atmosphere ASTM B845-97 Method H Accelerated Test (20-Day Exposure)	Severity Level G3 per ANSI/ISA 71.04–2013, Airborne Contaminants—Gases 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. Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances 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. Up to 9.6 microns per year, corrosion rate of copper.
Vibration	IEC 60068-2-6 (Test Fc, Operating)

Attribute	1756-L73XT
Shock, operating	IEC 60068-2-27 (Test Ea, Unpackaged Shock)
Shock, nonoperating	50 g IEC 60068-2-27 (Test Ea, Unpackaged Shock)
Emissions	IEC 61000-6-4
ESD immunity	IEC 61000-6-4
Radiated RF immunity	IEC 61000-4-3
Conducted RF Immunity	IEC 61000-4-6

1756-L73XT Controller Certifications

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

Certification	1756-L73XT
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 and UKCA	European Union 2014/30/EU EMC Directive, compliant with: • EN 61000-6-4; Industrial Emissions • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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
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

Certification	1756-L73XT
	CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

ControlLogix 5570 Controller Accessories

You can use these accessories with ControlLogix® 5570 controllers.

Memory Cards

Memory cards offer nonvolatile memory to store a user program and tag data on a controller. The ControlLogix® 5570 controllers support 1784-SD1 and 1784-SD2 Secure Digital (SD) cards.

IMPORTANT: Memory cards are sold separately.

Attribute	1784-SD1	1784-SD2
Type	Secure Digital (SD) card	
Memory	1 GB	2 GB
Supported controllers	1756-L71, 1756-L71K, 1756-L72,1756-L72K, 1756-L72EROM, 1756-L73,1756-L73K, 1756-L73EROM, 1756-L73XT, 1756-L74, 1756-L74K, 1756-L75, 1756-L75K	
Weight, approx	1.76g (0.06 oz)	

Ethernet and USB Port Protection Plugs

ControlLogix® 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.

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 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.

ControlLogix 5570 Standard and Conformal Coated Controller Standard Energy Storage Modules

Instead of a battery, the standard and conformal coated 1756-L7 controllers are shipped with a 1756-ESMCAP energy storage module (ESM) already installed.

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

Table 5. ControlLogix 5570 Controller Energy Storage Modules Technical Specifications

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 @ 5.1 V DC	330 mA	300 mA	330 mA
Temperature code	T4		
Enclosure type rating	None (open-style)		

Table 6. ControlLogix 5570 Controller Energy Storage Modules Environmental Specifications

Attribute	1756-ESMCAP	1756-ESMCAPK	1756-ESMNSE	1756-ESMNSEK	1756-ESMNRM	1756-ESMNRMK
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					

Table 7. ControlLogix 5570 Controller Energy Storage Modules Environmental Specifications (Continued)

Attribute	1756-ESMCAP	1756-ESMCAPK	1756-ESMNSE	1756-ESMNSEK	1756-ESMNRM	1756-ESMNRMK
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					

Table 8. ControlLogix 5570 Controller Energy Storage Modules Certifications
See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

Certification	1756-ESMCAP, 1756-ESMCAPK, 1756-ESMNSE, 1756-ESMNSEK, 1756-ESMNRM, 1756-ESMNRMK
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 US and Canada. See UL File E194810.
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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
KC	Korean Registration of Broadcasting and Communication Equipment, compliant with Article 58-2 of Radio Waves Act, Clause 3

Table 8. ControlLogix 5570 Controller Energy Storage Modules Certifications
See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

(continued)

Certification	1756-ESMCAP, 1756-ESMCAPK, 1756-ESMNSE, 1756-ESMNSEK, 1756-ESMNRM, 1756-ESMNRMK
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
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Les 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

GuardLogix 5570 Controllers

Figure 7. GuardLogix® 5570 Controller with Safety Partner



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.

ATTENTION: Conformal Coated Products

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 remain installed in all unoccupied ports and memory cards must remain installed 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, but must 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

GuardLogix 5570 Standard and Conformal Coated Controllers Technical Features

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)	–

GuardLogix 5570 Standard and Conformal Coated Controllers Technical Specifications

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) Larger versions may be available. **Important:** Memory cards are sold separately.			–
Digital I/O, max	128,000			–
Analog I/O, max	4000			–
Total I/O, max	128,000			–
Replacement battery	–			

Attribute	1756-L71S, 1756-L71SK	1756-L72S, 1756-L72SK	1756-L73S, 1756-L73SK	1756-L7SP, 1756-L7SPK
Energy storage modules	Available 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)			Safety partner modules: • 1756-SPESMNSE capacitor energy storage module (removable, no residual WallClockTime power backup) • 1756-SPESMNRM capacitor energy storage module (non-removable, helps prevent USB connection and SD card use)
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 with IEC/UL 61010-1			–
Weight, approx	0.25 kg (0.55 lb)			
Slot width	2 (both modules needed; each occupies 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 Use this Conductor Category information to plan conductor routing. See Industrial Wiring and Grounding Guidelines, publication 1770-4.1.	3 – on USB ports			–
Temperature code	T4			
Enclosure type rating	None (open-style)			

GuardLogix 5570 Standard and Conformal Coated Controllers Environmental Specifications

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)	0 °C ≤ Ta ≤ +60 °C (+32 °F ≤ Ta ≤ +140 °F)	

Attribute	1756-L71S, 1756-L72S, 1756-L73S, 1756-L7SP	1756-L71SK, 1756-L72SK, 1756-L73SK, 1756-L7SPK
IEC 60068-2-2 (Test Be, Operating Dry Heat) IEC 60068-2-14 (Test Nb, Operating Thermal Shock)		
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 to +85 °C (-40 to +185 °F)	
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5 to 95% noncondensing	
Conformal coated	No	Yes
Corrosive atmosphere ASTM B845-97 Method H Accelerated Test (20-Day Exposure)	—	Severity Level G3 per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases 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. Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances Up to 9.6 microns per year, corrosion rate of copper.
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	
EFT/B Immunity	IEC 61000-4-4	
Conducted RF immunity	IEC 61000-4-6	

GuardLogix 5570 Standard and Conformal Coated Controllers Certifications

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

Certification	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 the U.S. and Canada. See UL File E65584. UL Listed for Class I, Division 2, Group A, B, C, D Hazardous Locations, certified for the U.S. and Canada. See UL File E194810.

Certification	1756-L71S, 1756-L72S, 1756-L73S, 1756-L7SP, 1756-L71SK, 1756-L72SK, 1756-L73SK, 1756-L7SPK
CE and UKCA	European Union 2014/30/EU EMC Directive, compliant with: • EN 61326-1; Measurement, Control, and Laboratory Equipment - Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A and B) European Union 2006/42/EC Machinery Directive, 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
ATEX	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”; certificate UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of the 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	Capable of SIL CL 3 according to IEC 61508, Category 4 according to EN 954-1, and 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.

Certification	1756-L71S, 1756-L72S, 1756-L73S, 1756-L7SP, 1756-L71SK, 1756-L72SK, 1756-L73SK, 1756-L7SPK
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1er muharram 1437 (15 October 2015) - Electrical equipment intended for use within certain voltage limits • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 July 2015) - Electromagnetic compatibility of equipment

GuardLogix-XT 5570 Controllers

The 1756 GuardLogix-XT™ 5570 controllers function the same way and share the same features as the traditional GuardLogix® 5570 Standard and Conformal Coated Controllers. The GuardLogix-XT™ 5570 controllers are conformal coated to add a degree of protection against harsh, corrosive gas environments. The GuardLogix-XT™ 5570 system can withstand temperature ranges from -25...+70 °C (-13...+158 °F). You must use a 1756-L73SXT primary controller with a 1756-L7SPXT safety partner.

Customers who previously used the LXT chassis should migrate to the K version of the chassis.

GuardLogix-XT 5570 Technical Specifications

Attribute	1756-L73SXT	1756-L7SPXT
User memory	8 MB	-
Safety memory	4 MB	Configured to match primary controller
I/O memory	0.98 MB	-
Nonvolatile memory storage	1 GB Secure Digital (SD) card (1784-SD1) Larger versions may be available. **Important:** Memory cards are sold separately. For XT controllers, the installed memory card must remain in place to maintain the published XT corrosion specifications.	-
Digital I/O, max	128,000	-
Analog I/O, max	4000	-
Total I/O, max	128,000	-
Energy storage modules	• 1756-ESMCAPXT capacitor energy storage module extreme temperature (removable, ships installed with every controller) • 1756-ESMNSEXT capacitor energy storage module extreme temperature (removable, no residual WallClockTime power backup) • 1756-ESMNRMXT capacitor energy storage module extreme temperature (non-removable, helps prevent USB connection and SD card use to help secure the controller)	• 1756-SPESMNSEXT capacitor energy storage module for the safety partner extreme temperature (removable, no residual WallClockTime power backup) • 1756-SPESMNRMXT capacitor energy storage module for the safety partner extreme temperature (non-removable, helps prevent USB connection and SD card use to help secure the controller)
Current draw @ 1.2V DC	5 mA	

Attribute	1756-L73SXT	1756-L7SPXT
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 backplane Compliant and tested according to IEC/UL 61010-1	-
Weight, approx	0.25 kg (0.55 lb)	
Slot width	2 (need 2 modules; each uses a slot)	
Module location	Chassis-based, any slot	Chassis slot immediately to the right of the primary controller
Chassis	For extended temperature applications, use 1756-A7XT and 1756-A10XT, Series C For extended temperature and corrosive atmosphere applications, use 1756-A7ZXT and 1756-A10ZXT For low temperature and corrosive atmosphere applications only, use 1756-A4K, 1756-A7K, 1756-A10K, 1756-A13K, 1756-A17K	
Power supply, standard	1756-PAXT, 1756-PA30XT, 1756-PBXT, 1756-PB30XT	
Power supply, redundant	1756-PAXTR, 1756-PBXTR	
Wire category Use this conductor category information to plan conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.	3 - on USB ports	—
Temperature code	T4	
Enclosure type rating	None (open-style)	

GuardLogix-XT 5570 Environmental Specifications

Attribute	1756-L73SXT, 1756-L7SPXT
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)	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤ +158 °F) When using a 1756-A7LXT chassis, the surrounding air temperature range is -25 to +60 °C (-13 to +140 °F), even when using an XT controller.
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold) IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat)	-40 to +85 °C (-40 to +185 °F)

Attribute	1756-L73SXT, 1756-L7SPXT
IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5 to 95% noncondensing
Conformal coated	Yes
Corrosive atmosphere ASTM B845-97 Method H Accelerated Test (20-Day Exposure)	Severity Level G3 per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases 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. Severity Level CX per IEC 60721-3-3:2019, Chemically Active Substances Up to 9.6 microns per year, corrosion rate of copper.
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
EFT/B Immunity	IEC 61000-4-4
Conducted RF immunity	IEC 61000-4-6

GuardLogix-XT 5570 Certifications

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

Certification	1756-L73SXT, 1756-L7SPXT
c-UL-us	UL Listed Industrial Control Equipment, certified for the U.S. and Canada. See UL File E65584. UL Listed for Class I, Division 2, Group A, B, C, D Hazardous Locations, certified for the U.S. and Canada. See UL File E194810.
CE and UKCA	European Union 2014/30/EU EMC Directive, compliant with: • EN 61326-1; Measurement, Control, and Laboratory Equipment – Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A and B)

Certification	1756-L73SXT, 1756-L7SPXT
	European Union 2006/42/EC Machinery Directive, 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.
ATEX	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 UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety “e”; certificate UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of the 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	Capable of SIL CL 3 according to IEC 61508, Category 4 according to EN 954-1, and PLe according to ISO 13849-1. Certification applies 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 1er muharram 1437 (15 October 2015) – Electrical equipment intended for use within certain voltage limits • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 July 2015) – Electromagnetic compatibility of equipment

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 support 1784-SD1 and 1784-SD2 Secure Digital (SD) cards.

IMPORTANT: Memory cards are sold 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 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.

Table 9. GuardLogix 5570 Controller Energy Storage Modules Technical Specifications

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.

Attribute	1756-SPESMNSEXT	1756-SPESMNRMXT
Description	Capacitor energy storage module for the extreme-temperature safety partner (removable, no residual WallClockTime power backup). Use this ESM if your application requires that the installed ESM depletes its residual energy to 40 microjoules or less	Capacitor energy storage module for the safety extreme temperature partner (helps prevent USB connection and SD card use to help secure the controller). If the SD card is installed before insertion of the 1756-ESMNRM module, the SD card remains

Table 9. GuardLogix 5570 Controller Energy Storage Modules Technical Specifications

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.

(continued)

Attribute	1756-SPESMNSEXT	1756-SPESMNRMXT
	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 microjoules or less before you remove the ESM.	functional, but not removable. This ESM provides your application an enhanced degree of security.
Current draw @ 5.1V DC	300 mA	330 mA
Temperature code T4	T4	
Enclosure type rating	None (open-style)	

Table 10. GuardLogix 5570 Controller Energy Storage Modules Environmental Specifications

Attribute	1756-SPESMNSEXT	1756-SPESMNRMXT
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)	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤+158 °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	
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 10...500 Hz	
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g	
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g	
Emissions	IEC 61000-6-4	

Table 10. GuardLogix 5570 Controller Energy Storage Modules Environmental Specifications (continued)

Attribute	1756-SPESMNSEXT	1756-SPESMNRMXT
ESD immunity	IEC 61000-4-2	
Radiated RF immunity	IEC 61000-4-3	

Table 11. GuardLogix 5570 Controller Energy Storage Modules Certifications
See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

Certification	1756-SPESMNSEXT, 1756-SPESMNRMXT
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 US and Canada. See UL File E194810.
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of Radio Waves Act, Clause 3
CCC	CCC 2020122309111998

Table 11. GuardLogix 5570 Controller Energy Storage Modules Certifications
See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

(continued)

Certification	1756-SPESMNSEXT, 1756-SPESMNRMXT
	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
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1er muharram 1437 (15 October 2015) – Electrical equipment intended for use within certain voltage limits • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 July 2015) – Electromagnetic compatibility of equipment

GuardLogix 5570 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.

Table 12. GuardLogix® 5570 Controller Energy Storage Modules Technical Specifications

Attribute	1756-ESMCAPXT	1756-ESMCAPXT	1756-ESMNRMXT
Description	Extreme-temperature capacitor energy storage module (removable, ships installed with every extreme-temperature controller).	Extreme-temperature 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.	Extreme-temperature 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 before 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)		

Table 13. GuardLogix 5570 Controller Energy Storage Modules Environmental Specifications

Attribute	1756-ESMCAPXT	1756-ESMCAPXT	1756-ESMNRMXT
Temperature, operating IEC 60068-2-1 (Test Ae, Operating Cold), IEC 60068-2-2 (Test Be, Operating Dry Heat),	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤+158 °F)		

Table 13. GuardLogix 5570 Controller Energy Storage Modules Environmental Specifications (continued)

Attribute	1756-ESMCAPXT	1756-ESMCAPXT	1756-ESMNRMXT
IEC 60068-2-14 (Test Nb, Operating Thermal Shock)			
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		
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 10...500 Hz		
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g		
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g		
Emissions	IEC 61000-6-4		
ESD immunity	IEC 61000-4-2		
Radiated RF immunity	IEC 61000-4-3		

Table 14. GuardLogix 5570 Controller Energy Storage Modules Certifications
See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

Certification	1756-SPESMNSEXT, 1756-SPESMNRMXT
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 US and Canada. See UL File E194810.
CE and UKCA	European Union 2014/30/EU EMC Directive, compliant with: • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity

Table 14. GuardLogix 5570 Controller Energy Storage Modules Certifications
See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

(continued)

Certification	1756-SPESMNSEXT, 1756-SPESMNRMXT
	• EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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
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
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1er muharram 1437 (15 October 2015) – Electrical equipment intended for use within certain voltage limits • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 July 2015) – Electromagnetic compatibility of equipment

GuardLogix 5570 Safety Partner Energy Storage Modules

The 1756-L7SP safety partner for a GuardLogix system has these energy storage modules available.

Table 15. GuardLogix 5570 Safety Partner Energy Storage Modules

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.

Attribute	1756-SPESMNSE, 1756-SPESMNSEK	1756-SPESMNRM
Description	Capacitor energy storage module for the extreme-temperature safety partner (removable, no residual WallClockTime power backup). Use this ESM if your application requires that the installed ESM depletes its residual energy to 40 microjoules 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 microjoules or less before you remove the ESM.	Capacitor energy storage module for the safety extreme temperature partner (helps prevent USB connection and SD card use to help secure the controller). If the SD card is installed before 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	300 mA	330 mA
Temperature code	T4	
Enclosure type rating	None (open-style)	

Table 16. GuardLogix 5570 Safety Partner Energy Storage Modules

Attribute	1756-SPESMNSE	1756-SPESMNSEK	1756-SPESMNRM
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)	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤+158 °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		
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 10...500 Hz		

Table 16. GuardLogix 5570 Safety Partner Energy Storage Modules (continued)

Attribute	1756-SPESMNSE	1756-SPESMNSEK	1756-SPESMNRM
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g		
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g		
Emissions	IEC 61000-6-4		
ESD immunity	IEC 61000-4-2		
Radiated RF immunity	IEC 61000-4-3		

Table 17. GuardLogix 5570 Safety Partner Energy Storage Modules Certifications
See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

Certification	1756-SPESMNSE, 1756-SPESMNSEK, 1756-SPESMNRM
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 US and Canada. See UL File E194810.
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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

Table 17. GuardLogix 5570 Safety Partner Energy Storage Modules Certifications
See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

(continued)

Certification	1756-SPESMNSE, 1756-SPESMNSEK, 1756-SPESMNRM
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
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
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1er muharram 1437 (15 October 2015) – Electrical equipment intended for use within certain voltage limits • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 July 2015) – Electromagnetic compatibility of equipment

GuardLogix-XT 5570 Extreme Temperature Safety Partner 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.

Table 18. GuardLogix-XT 5570 Extreme Temperature Safety Partner Energy Storage Modules Technical Specifications
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.

Attribute	1756-SPESMNSEXT	1756-SPESMNRMXT
Description	Capacitor energy storage module for the extreme-temperature safety partner (removable, no residual WallClockTime power backup). Use this ESM if your application requires that the installed ESM depletes its residual energy to 40 microjoules 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 microjoules or less before you remove the ESM.	Capacitor energy storage module for the safety extreme temperature partner (helps prevent USB connection and SD card use to help secure the controller). If the SD card is installed before 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	300 mA	330 mA
Temperature code T4	T4	

Table 18. GuardLogix-XT 5570 Extreme Temperature Safety Partner Energy Storage Modules Technical Specifications
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.

(continued)

Attribute	1756-SPESMNSEXT	1756-SPESMNRMXT
Enclosure type rating	None (open-style)	

Table 19. GuardLogix-XT 5570 Extreme Temperature Safety Partner Energy Storage Modules Environmental Specifications

Attribute	1756-SPESMNSEXT	1756-SPESMNRMXT
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)	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤+158 °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	
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 10...500 Hz	
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g	
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g	
Emissions	IEC 61000-6-4	
ESD immunity	IEC 61000-4-2	
Radiated RF immunity	IEC 61000-4-3	

Table 20. GuardLogix-XT 5570 Extreme Temperature Safety Partner Energy Storage Modules Certifications
See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

Certification	1756-SPESMNSEXT, 1756-SPESMNRMXT
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 US and Canada. See UL File E194810.
CE and UKCA	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)
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
ATEX	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

Table 20. GuardLogix-XT 5570 Extreme Temperature Safety Partner Energy Storage Modules Certifications
See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

(continued)

Certification	1756-SPESMNSEXT, 1756-SPESMNRMXT
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
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1er muharram 1437 (15 October 2015) – Electrical equipment intended for use within certain voltage limits • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 July 2015) – Electromagnetic compatibility of equipment

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.

Figure 8. Armor ControlLogix 5570 Controller



Figure 9. Armor GuardLogix 5570 Controller



Armor ControlLogix and Armor GuardLogix 5570 Features

Feature	1756-L72EROM, 1756-L73EROM	1756-L72EROMS, 1756-L73EROMS
Communication options	Standard on EtherNet/IP™ networks	Standard and safety on EtherNet/IP™ networks
Network connections	512 EtherNet/IP and 256 TCP connections Based on an enclosure with two 1756-EN3TR modules, which each support 256 EtherNet/IP™ and 128 TCP connections.	
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

Armor ControlLogix and Armor GuardLogix 5570 Technical Specifications

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) Larger versions may be available. **Important:** Memory cards are sold separately.			
Digital I/O, max	128,000			
Analog I/O, max	4000			
Total I/O, max	128,000			
Input voltage range	18…32 V DC			
Input voltage, nominal	24 V DC			
Input system power, pins 2 and 3	18…32 V DC @ 8 A			
Input pass-through power, pins 1 and 4	SELV 18…32 V DC @ 8 A			
Output external power, pins 2 and 3	18…32 V DC @ 6 A			
Output pass-through power, pins 1 and 4	SELV 18…32 V DC @ 8 A			
Fusing	Non-replaceable fuse is soldered in place This fuse is intended to guard against fire hazard due to short circuit conditions			
Isolation voltage	30 V (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 × 292.0 × 164.52 mm (9.4 × 11.5 × 6.5 in.)			
Ethernet ports	4 Ethernet M12 Category 5e			
Ethernet cable	802.3-compliant shielded or unshielded twisted pair			
USB port The USB port is intended for temporary local programming purposes only and not intended for permanent connection	USB 1.1, full speed (12 Mbps)			
Wire size	PE Ground: 1.3…5.2 mm (16…0 AWG)			

Attribute	1756-L72EROM	1756-L72EROMS	1756-L73EROM	1756-L73EROMS
Terminal block torque specifications	PE Ground: 2 N·m (17.7 lb·in)			
Wire category Use this Conductor Category information to plan conductor routing. See Industrial Wiring and Grounding Guidelines, publication 1770-4.1.	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			

Armor ControlLogix and Armor GuardLogix 5570 Environmental Specifications

Attribute	1756-L72EROM, 1756-L72EROMS, 1756-L73EROM, 1756-L73EROMS
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…60 °C (32…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
Temperature, ambient, max	60 °C (140 °F)
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
EFT/B immunity	IEC 61000-4-4
Surge transient immunity	IEC 61000-4-5
Conducted RF immunity	IEC 61000-4-6

Attribute	1756-L72EROM, 1756-L72EROMS, 1756-L73EROM, 1756-L73EROMS
Voltage variation	IEC 61000-4-29

Armor ControlLogix and Armor GuardLogix 5570 Certifications

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

Certification	1756-L72EROM, 1756-L73EROM	1756-L72EROMS, 1756-L73EROMS
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.	
CE and UKCA	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 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	
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of the Radio Waves Act, Clause 3	
TÜV certified for functional safety When used with specified firmware revisions.	–	Capable of Cat. 4 / PL e according to EN ISO 13849-1 and SIL 3 according to EN 62061 / IEC 61508 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 1er muharram 1437 (15 October 2015) - Electrical equipment intended for use within certain voltage limits • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 July 2015) - Electromagnetic compatibility of equipment	

Armor ControlLogix and Armor GuardLogix 5570 Controller Accessories

You can use these accessories with Armor™ ControlLogix® and Armor™ GuardLogix® 5570 controllers.

Memory Cards

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

The Armor ControlLogix® and Armor GuardLogix® 5570 controllers support 1784-SD1 and 1784-SD2 Secure Digital (SD) cards.

IMPORTANT: Memory cards are sold separately.

Attribute	1784-SD1	1784-SD2
Type	Secure Digital (SD) card	

Attribute	1784-SD1	1784-SD2
Memory	1 GB	2 GB
Supported controllers	1756-L72EROMS, 1756-L73EROMS	
Weight, approx	1.76 g (0.06 oz)	

Controller Redundancy

In a controller redundancy system, a pair of redundancy modules is required to link the redundancy chassis pair. The redundancy modules must have the same catalog number. The redundancy modules monitor events in each chassis and initiate system responses as required.

For ControlLogix® 5580 and ControlLogix® 5570 redundancy system requirements, see the Redundancy Systems User Manual, publication 1756-UM015.

For ControlLogix® 5590 redundancy system requirements, see the ControlLogix® 5590 High Availability Systems User Manual, publication 1756-UM901.

1756-RM3 Redundancy Modules

1756-RM3 Redundancy Modules Technical Specifications

The 1756-RM3-2SFP redundancy module is a 1756-RM3 module that comes with two 1783-SFP1GLX singlemode SFP transceivers. You must order cables separately.

Attribute	1756-RM3, 1756-RM3-2SFP	1756-RM3XT
Current draw @ 5.1 V DC	1 A	
Current draw @ 1.2 V DC	5 mA	
Power dissipation	6 W, max	
Thermal dissipation	21 BTU/hr	
Optical output power	-3 dB	
Transmission	1000 Mbps	
Connector type	Dual LC-type (fiber-optic)	
Cable types	8.5/125 µm singlemode fiber-optic cable 62.5/125 µm and 50/125 µm multimode fiber-optic cable	
Channels	2 (transmit and receive fiber)	
Connector cables	1756-RMC1, 1 m (3.28 ft) 1756-RMC3, 3 m (9.84 ft) 1756-RMC10, 10 m (32.81 ft)	
Conformal coating	No	Yes
Slot width	1 slot	
Module location	Chassis-based, any slot	
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17	1756-A7XT, 1756-A7ZXT, 1756-A10XT
Controller families, supported	ControlLogix® 5570, ControlLogix® 5580	

Attribute	1756-RM3, 1756-RM3-2SFP	1756-RM3XT
Power supply, standard	1756-PA72, 1756-PA75, 1756-PB72, 1756-PB75	1756-PAXT, 1756-PBXT
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2	–
Temperature code	T4	
Enclosure type	None (open-style)	
Weight, approx	0.29 kg (0.64 lb)	
Mounting	Standard ControlLogix® chassis, single-slot module	GuardLogix® chassis, single-slot module
Nonvolatile memory storage	8 GB microSD™ card (1784-MSD8) **Important:** Memory cards are sold separately.	1784-MSD8XT (8 GB)
SFP fiber-optic transceivers	Singlemode: 1783-SFP1GLX 1783-SFP1GEXE 1783-SFP1GZX Multimode: 1783-SFP1GSX	Singlemode: 1783-SFP1GLX-XT Multimode: 1783-SFP1GSX-XT

1756-RM3 Redundancy Modules Environmental Specifications

Attribute	1756-RM3, 1756-RM3-2SFP	1756-RM3XT
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)	-25 °C ≤ Ta ≤ +60 °C (-13 °F ≤ Ta ≤ +140 °F) Standard chassis, Series C -25 °C ≤ Ta ≤ +50 °C (-13 °F ≤ Ta ≤ +122 °F) Standard chassis, Series B	-25 °C ≤ Ta ≤ +70 °C (-13 °F ≤ Ta ≤ +158 °F) XT chassis
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 K Accelerated Test (30-day exposure) Plus additional Rockwell Automation® proprietary accelerated corrosive environment test protocol for industries with sources of gaseous sulfur compounds	–	Severity Level GX (per ANSI/ISA 71.04–2013, Airborne Contaminants—Gases 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 Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity

Attribute	1756-RM3, 1756-RM3-2SFP	1756-RM3XT
		Severity Level CX 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	

1756-RM3 Redundancy Modules Certifications

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

Certification	1756-RM3, 1756-RM3-2SFP	1756-RM3XT
CE and UKCA	European Union 2014/30/EU EMC Directive, compliant with: • EN 61326-1; Measurement, Control, and Laboratory Equipment – Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A and B)	
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions	
c-UL-us	UL Listed Industrial Control Equipment, certified for the U.S. and Canada. See UL File E65584. UL Listed for Class I, Division 2, Group A, B, C, D Hazardous Locations, certified for the U.S. and Canada. See UL File E194810.	
ATEX	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 24 ATEX 3261X	
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 24.0059X	

Certification	1756-RM3, 1756-RM3-2SFP	1756-RM3XT
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"; certificate UL24UKEX2995X • Zone 2 classification according to UKEx Regulation 2016 No. 1107	
FM	FM Approved Equipment for use in Class I, Division 2, Group A, B, C, D Hazardous Locations	
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of the 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	
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1er muharram 1437 (15 October 2015) – Electrical equipment intended for use within certain voltage limits • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 July 2015) – Electromagnetic compatibility of equipment	

Redundancy Module Bundles

The following table lists Redundancy Module Bundles that are available separately.

Catalog Number	Quantity	Contents
1756-RM3EN1	2	1756-EN4TR EtherNet Interface
	2	1756-A7 7-slot chassis
	2	1756-RM3-2SFP Premium Redundancy Module with 2 SFP
	2	1756-RMC1 1 meter fiber cable
1756-RM3EN2	4	1756-EN4TR EtherNet Interface
	2	1756-A7 7-slot chassis
	2	1756-RM3-2SFP Premium Redundancy Module w/ 2 SFP
	2	1756-RMC1 1 meter fiber cable
1756-RM3EN2XT	4	1756-EN4TRXT EtherNet Interface XT
	2	1756-A7ZXT 7-slot XT chassis
	2	1756-RM3XT Premium Redundancy XT Module
	4	1783-SFP1GLX-XT Single-mode XT SFP Module
	2	1756-RMC1 1 meter fiber cable

Small Form-factor Pluggable (SFP) Transceivers

The 1756-RM3-2SFP redundancy module is a 1756-RM3 module that comes with two 1756-SFP1GLX SFP fiber-optic transceivers. You must order fiber-optic cables separately.

The 1756-RM3 and 1756-RM3XT redundancy modules require you to order compatible SFP fiber-optic transceivers and fiber-optic cables for your application.

SFP Fiber-optic transceivers must be compatible with the following:

- Whether you are using a singlemode or multimode fiber cable.
- The distance between the chassis.
- The corrosive atmosphere and temperature ratings of your redundancy module. For example, choose an SFP transceiver with an 'XT' in the catalog number for your 1756-RM3XT module to ensure that the combined module is rated for extended protection in corrosive gas environments.

Table 21. SFP Transceiver Technical Specifications

Cat. No.	Description	Interface Connector	Wavelength (nm)	Core Size / Cladding Size (micron)	Modal Bandwidth (MHz/km)	Cable Length	Transmit Power (dBm)	Receive Power (dBm)
1783-SFP1GSX	1000Base-SX multimode fiber	Dual LC	850	62.5/125	160	220 m (722 ft)	-3 (max)...-9.5 (min)	0 (max)...-17 (min)
				62.5/125	200	275 m (902 ft)		
				50/125	400	500 m (1640 ft)		
				50/125	500	550 m (1804 ft)		
1783-SFP1GLX	1000Base-LX/LH singlemode fiber	Dual LC	1310	G.652	–	10 km (32,808 ft)	-3 (max)...-9.5 (min)	-3 (max)...-20 (min)
1783-SFP1GEXE[1]	1000Base-EX singlemode fiber	Dual LC	1310	G.652[2]	–	40 km (131,234 ft)	+3 (max)...-1 (min)	+1 (max)...-22 (min)
1783-SFP1GZX[2]	1000Base-ZX singlemode fiber	Dual LC	1550	G.652 [2]	–	70 km (229,659 ft)	+5 (max)...0 (min)	-3 (max)...-23 (min)
1783-SFP1G SX-XT	1000Base-SX multimode fiber	Dual LC	850	62.5/125	–	300 m (984 ft)	-3.5 (max)...-9.5 (min)	-3 (max)...-18 (min)
				50/125	–	550 m (1804 ft)		
1783-SFP1G LX-XT	1000Base-LX/LH singlemode fiber	Dual LC	1310	G.652	–	20 km (65,616 ft)	-3 (max)...-9 (min)	-3 (max)...-23 (min)

1. The 1783-SFP1GEXE transceiver operates on standard singlemode fiber-optic link spans of up to 40 km (131,234 ft). For back-to-back connectivity, insert a 5-dB inline optical attenuator between the fiber-optic cable and the receiving port on the SFP transceiver at each end of the link.
2. When shorter distances of singlemode fiber (SMF) are used, you can avoid overloading the receiver by inserting an inline optical attenuator in the link. If the fiber-optic cable span loss is less than 8 dB, insert a 10-dB inline optical attenuator between the fiber-optic cable plant and the receiving port on the SFP transceiver at each end of the link.

To select the fiber-optic cables to use in your application, consider the following:

- Each cable type requires a compatible SFP transceiver.
- Singlemode fiber-optic cables support one light mode and are commonly used in applications that require longer distances between chassis and high-bandwidth.
- Multimode fiber-optic cables support multiple simultaneous light modes and are commonly used in applications that have shorter distances between chassis and when lower costs are a priority.

If you don't already have a fiber-optic cable to use with your redundancy system, you must order one. The following redundancy cables are available from Rockwell Automation®. These cables only support singlemode.

Table 22. Available Fiber-optic Cables - Singlemode Only

Cat. No.	Length
1756-RMC1	1 m (3.28 ft)
1756-RMC3	3 m (9.84 ft)
1756-RMC10	10 m (32.81 ft)

1756-RM2 Redundancy Modules

1756-RM2 Redundancy Modules Technical Specifications

Attribute	1756-RM2, 1756-RM2K	1756-RM2XT
Current draw @ 5.1V DC	1.16 A	1.16 A
Current draw @ 24V DC	3.4 mA	3.4 mA
Power dissipation	6 W, max	6 W, max
Thermal dissipation	21 BTU/hr	21 BTU/hr
Connector cables	1756-RMC1, 1 m (3.28 ft) 1756-RMC3, 3 m (9.84 ft) 1756-RMC10, 10 m (32.81 ft)	1756-RMC1, 1 m (3.28 ft) 1756-RMC3, 3 m (9.84 ft) 1756-RMC10, 10 m (32.81 ft)
Slot width	1 slot	1 slot
Module location	Chassis-based, any slot	Chassis-based, any slot
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17	1756-A7XT, 1756-A10XT
Controller families, supported	ControlLogix® 5570, ControlLogix® 5580	ControlLogix® 5570, ControlLogix® 5580
Power supply, standard	1756-PA72, 1756-PA75, 1756-PB72, 1756-PB75	1756-PAXT, 1756-PBXT
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2	None
Temperature code	T4	T4
Enclosure type	None (open-style)	None (open-style)

Attribute	1756-RM2, 1756-RM2K	1756-RM2XT
Weight, approx	0.29 kg (0.64 lb)	0.29 kg (0.64 lb)
Mounting	Standard ControlLogix® chassis, single-slot module	ControlLogix-XT™ chassis, single-slot module

1756-RM2 Redundancy Modules Environmental Specifications

Attribute	1756-RM2, 1756-RM2K	1756-RM2XT
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…60 °C (32…140 °F)	-25…+70 °C (-13…+158 °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)	-40…+85 °C (-40…+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5…95% noncondensing	5…95% noncondensing
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	

1756-RM2 Redundancy Modules Certifications

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

Certification	1756-RM2, 1756-RM2K	1756-RM2XT
CE and UKCA	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)	

Certification	1756-RM2, 1756-RM2K	1756-RM2XT
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions	
c-UL-us	UL Listed Industrial Control Equipment, certified for U.S. 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.	
ATEX	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 2818X	
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 22.0063X	
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 UL22UKEX2604X • Zone 2 classification according to UKEx Regulation 2016 No. 1107	
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations	-
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	
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1er muharram 1437 (15 October 2015) – Electrical equipment intended for use within certain voltage limits • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 July 2015) – Electromagnetic compatibility of equipment	

1756-RM Redundancy Modules

1756-RM Redundancy Modules Technical Specifications

Attribute	1756-RM	1756-RMXT
Current draw @ 1.2V DC	4 mA	
Current draw @ 5.1V DC	1.2 A	
Current draw @ 24V DC	120 mA	
Power dissipation	9.0 W, max	
Thermal dissipation	31 BTU/hr	
Connector cables	1756-RMC1, 1 m (3.28 ft) 1756-RMC3, 3 m (9.84 ft) 1756-RMC10, 10 m (32.81 ft)	
Slot width	1 slot	
Module location	Chassis-based, any slot	
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17	1756-A7XT, 1756-A4LXT, 1756-A5LXT, 1756-A7LXT
Controller families, supported	ControlLogix® 5560, ControlLogix® 5570	
Power supply, standard	1756-PA72, 1756-PA75, 1756-PB72, 1756-PB75	1756-PAXT, 1756-PBXT
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2	None
North American temperature code	T4	
IEC temperature code	T4	
Enclosure type	None (open-style)	
Weight, approx	0.29 kg (0.64 lb)	
Mounting	ControlLogix-XT™ chassis, single-slot module	

1756-RM Redundancy Modules Environmental Specifications

Attribute	1756-RM	1756-RMXT
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0…60 °C (32…140 °F)	-25…+70 °C (-13…+158 °F) When using a 1756-A7LXT chassis, surrounding air temperature range is -25…+60 °C (-13…+140 °F) even when using an 'XT' redundancy module.

Attribute	1756-RM	1756-RMXT
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)	
Temperature, surrounding air, max	60 °C (140 °F)	70 °C (158 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing	
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	

1756-RM Redundancy Modules Certifications

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

Certification	1756-RM	1756-RMXT
CSA	CSA Certified Process Control Equipment. See CSA File LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.	—
CE	European Union 2004/108/IEC 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)	
c-UL-us	UL Listed Industrial Control Equipment, certified for U.S. 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.	

Certification	1756-RM	1756-RMXT
ATEX	European Union 94/9/EC ATEX Directive, compliant with: • EN 60079-15; Potentially Explosive Atmospheres, Protection “n” • EN 60079-0; General Requirements • II 3 G Ex nA IIC T4 X Gc	
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations	-
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3	

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation. You can view or download publications at rok.auto/literature.

Resource	Description
ControlLogix 5590 Controllers technical documentation	Technical Documentation Center. Access and download technical specifications, installation instructions, and user manuals.
ControlLogix 5590 Controllers Installation Instructions, 1756-IN900	Provides installation instructions for ControlLogix® 5590 controllers.
1756 ControlLogix Controllers Technical Data, 1756-TD001	Provides specifications for ControlLogix®controllers.
ControlLogix 5590 Controllers Technical Data, 1756-TD900	Provides specifications for ControlLogix® 5590 controllers.
ControlLogix 5590 High Availability Systems User Manual, 1756-UM901	Describes how to set up, configure, program, monitor, and troubleshoot ControlLogix® 5590 redundancy and Logix SIS.
Logix 5000 Controllers Design Considerations Reference Manual, 1756-RM094	Provides information to help design and plan Logix 5000® systems.
Replacement Guidelines: Logix 5000® Controllers Reference Manual, 1756-RM100	Compares ControlLogix® controllers, and provides guidelines on the features, functions, instruction updates, and differences between controllers.
System Security Design Guidelines Reference Manual, SECURE-RM001	Provides guidance on how to conduct security assessments, implement Rockwell Automation products in a secure system, harden the control system, manage user access, and dispose of equipment.
Security Configuration User Manual, SECURE-UM001	Describes how to configure and use Rockwell Automation products to improve the security of your industrial automation system.
CIP Security with Rockwell Automation Products Application Technique, SECURE-AT001	Describes how to implement the Common Industrial Protocol (CIP™) Security standard in your control system.
FactoryTalk Security Application Technique, SECURE-AT001	Describes how to use FactoryTalk® Security to implement authentication and authorization in your industrial automation system and enforce product-specific security for Studio 5000 Logix Designer® FactoryTalk® View, and FactoryTalk® AssetCentre
Industrial Automation Wiring and Grounding Guidelines, 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications.	Provides declarations of conformity, certificates, and other certification details.

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Customer Care	Access information on spare parts availability and ordering.	customercare@rockwellautomation.com
Industrial Repair Services	Access information on Rockwell Automation professional repair services.	rok.auto/repair-service
Right to Repair Information	Request right to repair information and technical documentation for eligible Rockwell Automation products.	rok.auto/right-to-repair
Technical Documentation Center	Quickly access and download technical specifications, installation instructions, and user manuals.	rok.auto/techdocs
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Get help determining how products interact, check features and capabilities, and find associated firmware.	rok.auto/pcdc

Documentation Feedback

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Waste Electrical and Electronic Equipment (WEEE)



At the end of life, this equipment should be collected separately from any unsorted municipal waste.

Rockwell Automation maintains current product environmental information on its website at rok.auto/pec.

Allen-Bradley, Armor, ArmorBlock, ArmorBlock MaXum, ArmorPOINT, CompactBlock, Compact I/O, CompactLogix, ControlLogix, ControlLogix-XT, Data Highway Plus, DH+, DriveLogix, expanding human possibility, FLEX, FLEX Ex, FlexLogix, Guard I/O, GuardLogix, GuardLogix-XT, InView, MicroLogix, On-Machine, PanelView, PLC-2, PLC-3, PLC-5, POINT I/O, POINT Guard I/O, PowerFlex, Rockwell Automation, RSLogix 5000, SCANport, SLC, and SoftLogix are trademarks of Rockwell Automation, Inc.

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