Technical Data

Original Instructions

ControlLogix and GuardLogix Controller Specifications

Bulletin 1756

Summary of Changes

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

Topic	Page
Added information for 1756-RM3 and 1756-RM3XT redundancy modules	57...61
Added SFP transceiver specifications for 1756-RM3 and 1783-RM3XT redundancy modules	62

Catalog Numbers

This publication is applicable to these controllers and modules:

ControlLogix® Controllers:	1756-L71, 1756-L72, 1756-L73, 1756-L74, 1756-L75, 1756-L81E, 1756-L82E, 1756-L83E, 1756-L84E, 1756-L85E
ControlLogix Conformal Coated Controllers:	1756-L71K, 1756-L72K, 1756-L73K, 1756-L74K, 1756-L75K, 1756-L81EK, 1756-L82EK, 1756-L83EK, 1756-L84EK, 1756-L85EK
ControlLogix-XT™ Controllers:	1756-L73XT, 1756-L81EXT, 1756-L82EXT, 1756-L83EXT, 1756-L84EXT, 1756-L85EXT
ControlLogix No Stored Energy (NSE) Controllers:	1756-L81E-NSE, 1756-L82E-NSE, 1756-L83E-NSE, 1756-L84E-NSE, 1756-L85E-NSE
ControlLogix-XT NSE Controllers:	1756-L81E-NSEXT, 1756-L82E-NSEXT, 1756-L83E-NSEXT, 1756-L84E-NSEXT, 1756-L85E-NSEXT
ControlLogix Process Controllers:	1756-L81EP, 1756-L83EP, 1756-L85EP
ControlLogix-XT Process Controllers:	1756-L81EPXT, 1756-L83EPXT, 1756-L85EPXT
GuardLogix® Controllers:	1756-L71S, 1756-L72S, 1756-L73S, 1756-L7SP, 1756-L81ES, 1756-L82ES, 1756-L83ES, 1756-L84ES, 1756-L85ES, 1756-L8SP
GuardLogix Conformal Coated Controllers:	1756-L71SK, 1756-L72SK, 1756-L73SK, 1756-L7SPK, 1756-L81ESK, 1756-L82ESK, 1756-L83ESK, 1756-L84ESK, 1756-L8SPK
GuardLogix-XT™ Controllers:	1756-L73SXT, 1756-L7SPXT 1756-L81EXTS, 1756-L82EXTS, 1756-L83EXTS, 1756-L84EXTS, 1756-L8XTSP 1756-L81ESXT, 1756-L82ESXT, 1756-L83ESXT, 1756-L84ESXT, 1756-L8SPXT
Armor™ ControlLogix Controllers:	1756-L72EROM, 1756-L73EROM
Armor™ GuardLogix Catalog Numbers:	1756-L72EROMS, 1756-L73EROMS
ControlLogix Redundancy Modules Catalog Numbers:	1756-RM2, 1756-RM2K, 1756-RM2XT 1756-RM3, 1756-RM3-2SFP, 1756-RM3XT

ControlLogix Controllers

The ControlLogix 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 controllers can monitor and control I/O across the ControlLogix backplane, and over network links. The ControlLogix 5580 controllers have an embedded Ethernet port for a direct connection to Ethernet-enabled devices and networks, and also support communication interface modules in the local chassis. To provide communication for ControlLogix 5570 controllers, install the appropriate communication interface module into 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.

These ControlLogix controllers have a conformal coating that adds a degree of protection against harsh, corrosive environments:

- ControlLogix 5580 controllers with a 'K' or 'XT' in the catalog number
- ControlLogix NSE controllers and ControlLogix Process controllers
- ControlLogix 5570 with a 'K' or 'XT' in the catalog number

ATTENTION: ControlLogix 5580 and 5570 conformal coated products are shipped with port protection plugs/covers installed to provide a degree of protection from corrosive environments. Once the factory packaging seal is broken, the port plugs/covers must remain installed in unused ports at all times for the product to maintain its corrosive atmosphere rating. If temporary access is required, plugs can be removed, but should be reinserted after temporary access is complete.

ControlLogix 5580 Controllers

Features - ControlLogix 5580 Controllers

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 continuous (1), periodic, and event tasks 1000 programs/task				
Built-in communication ports[8]	1-port USB[1] 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 [2] [3]	• 128,000 without CIP Security™ • 40,000 with integrity • 20,000 with integrity and confidentiality				
Message Rate Capacity HMI/MSG (Class 3) - messages/second [2] [3]	• 2000 without CIP Security • 1500 with integrity • 900 with integrity and confidentiality				
Communication options	• EtherNet/IP™ • ControlNet® • DeviceNet® • Data Highway Plus™ • Remote I/O • SERCOS[4] • Third-party process and device networks				
EtherNet/IP nodes supported max[5]	60 nodes[7] 100 nodes[8]	80 nodes[7] 175 nodes[8]	100 nodes[6] 250 nodes[8]	150 nodes[7] 250 nodes[8]	300 nodes
OPC UA nodes supported max[9][10]	–	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. See 'EtherNet/IP nodes supported, max' in this table. • 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)				
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[11]				
Programming languages	• Relay ladder logic (RLL) • Structured text • Function Block Diagram • Sequential function chart (SFC)				

(1) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(2) I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Maximums assume that the processor is the target, not the originator. 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.
(3) For information on integrity and confidentiality, see the CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001.
(4) With Studio 5000 Logix Designer® application version 31.00.01 or later.
(5) 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.
(6) With Studio 5000 Logix Designer application versions 28.00.01 and 29.00.02.
(7) With Studio 5000 Logix Designer application version 29.00.02.
(8) With Studio 5000 Logix Designer application version 30.00.00 or later.
(9) 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.
(10) With Studio 5000 Logix Designer application version 36.00.00 or later.
(11) When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet, ControlNet, RIO, DH+™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.

Technical Specifications - ControlLogix 5580 Controllers

Attribute	1756-L81E, 1756-L81EK	1756-L82E, 1756-L82EK	1756-L83E, 1756-L83EK	1756-L84E, 1756-L84EK	1756-L85E, 1756-L85EK
User 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				
Optional nonvolatile memory storage	2 GB Secure Digital Card (1784-SD2), ships pre-installed in the controller(1)				
Energy storage module	Embedded in controller, nonremovable				
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	Not Applicable				
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-A17 K Series B, Series C				
Power supply, standard	1756-PA50, 1756-PA72, 1756-PA72K, 1756-PA75, 1756-PA75K, 1756-PB50, 1756-PB72, 1756-PB72K, 1756-PB75, 1756-PB75K, 1756-PH75, 1756-PC75				
Power supply, redundant	1756-PA75R, 1756-PA75RK, 1756-PB75R, 1756-PB75RK, 1756-PSCA2, 1756-PSCA2K				
Wire category(2)	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)				

(1) Larger versions may be available. See Controller Accessories on page 67.
(2) Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications - ControlLogix 5580 Controllers

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	
Corrosive Atmosphere ASTM B845-97 Method K Accelerated Test (20-Day Exposure)	–	Severity Level G3[1] per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX[1][X2] per IEC 60721-3-3:2019, Chemically Active Substances
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)	30 g	
Emissions	IEC 61000-6-4	
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges	
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz	
EFT/B Immunity IEC 61000-4-4	±2 kV at 5 kHz on Ethernet ports	
Surge Transient Immunity IEC 61000-4-5	±2 kV line-earth (CM) on Ethernet ports	
Conducted RF Immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz	

(1) Port Plugs must remain installed in unused ports at all times during storage and operation for the product to meet its corrosive atmosphere rating.
(2) Up to 86.4 g/(m2.yr), mass loss of copper due to corrosion.

Certifications - ControlLogix 5580 Controllers

Certification[1]	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	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
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
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[2]
TÜV certified for security	IEC 62443-4-2 SL1[2]
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements

(1) See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.
(2) With Studio 5000 Logix Designer application version 32.00.01 or later.

ControlLogix 5580 NSE Controllers

Features - ControlLogix 5580 NSE Controllers

Feature	1756-L81E-NSE	1756-L82E-NSE	1756-L83E-NSE	1756-L84E-NSE	1756-L85E-NSE
Controller tasks	32 tasks, including a combination of continuous (1), periodic, and event tasks 1000 programs/task				
Built-in communication ports(8)	1-port USB(1) 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 (2) (3)	• 128,000 without CIP Security • 40,000 with integrity • 20,000 with integrity and confidentiality				
Message Rate Capacity HMI/MSG (Class 3) - messages/second (2) (3)	• 2000 without CIP Security • 1500 with integrity • 900 with integrity and confidentiality				
Communication options	• EtherNet/IP • ControlNet • DeviceNet • Data Highway Plus • Remote I/O • SERCOS(4) • Third-party process and device networks				
EtherNet/IP nodes supported max(5)	100 nodes	175 nodes	250 nodes	250 nodes	300 nodes
OPC UA nodes supported max(6)(7)	—	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. See 'EtherNet/IP nodes supported, max' in this table. • 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)				
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(8)				
Programming languages	• Relay ladder logic (RLL) • Structured text • Function Block Diagram • Sequential function chart (SFC)				

(1) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(2) I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Maximums assume that the processor is the target, not the originator. 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.
(3) For information on integrity and confidentiality, see the CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001.
(4) With Studio 5000 Logix Designer® application version 31.00.01 or later.
(5) 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.
(6) 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.
(7) With Studio 5000 Logix Designer application version 36.00.00 or later.
(8) When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet, ControlNet, RIO, DH+™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.

Technical Specifications - ControlLogix 5580 NSE Controllers

Attribute	1756-L81E-NSE	1756-L82E-NSE	1756-L83E-NSE	1756-L84E-NSE	1756-L85E-NSE
User 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				
Optional nonvolatile memory storage	2 GB Secure Digital Card (1784-SD2), ships pre-installed in the controller(1)				
Energy storage module	Embedded in controller, nonremovable				
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-A17 K Series B, Series C				
Power supply, standard	1756-PA50, 1756-PA72, 1756-PA72K, 1756-PA75, 1756-PA75K, 1756-PB50, 1756-PB72, 1756-PB72K, 1756-PB75, 1756-PB75K, 1756-PH75, 1756-PC75				
Power supply, redundant	1756-PA75R, 1756-PA75RK, 1756-PB75R, 1756-PB75RK, 1756-PSCA2, 1756-PSCA2K				
Wire category(2)	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)				

(1) Larger versions may be available. See Controller Accessories on page 67.
(2) Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications - ControlLogix 5580 NSE Controllers

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
Corrosive Atmosphere(1) ASTM B845-97 Method K Accelerated Test (20-Day Exposure)	Severity Level G3(2) per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX(2)(3) per IEC 60721-3-3:2019, Chemically Active Substances
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)	30 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz
EFT/B Immunity IEC 61000-4-4	±2 kV at 5 kHz on Ethernet ports
Surge Transient Immunity IEC 61000-4-5	±2 kV line-earth (CM) on Ethernet ports
Conducted RF Immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz

(1) Only applicable to modules that have a 'K' or NSE in the catalog number.
(2) Port Plugs must remain installed in unused ports at all times during storage and operation for the product to meet its corrosive atmosphere rating.
(3) Up to 86.4 g/(m2.yr), mass loss of copper due to corrosion.

Certifications - ControlLogix 5580 NSE Controllers

Certification[1]	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. 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	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
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
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[2]
TÜV certified for security	IEC 62443-4-2 SL1[2]
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements

(1) See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.
(2) With Studio 5000 Logix Designer application version 32.00.01 or later.

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. The 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 process controller's hardware is also conformal-coated to add a degree of protection against harsh, corrosive environments, and can be used in temperature extremes from -25...+70 °C (-13...+158 °F) when deployed as part of a Logix-XT system.

Features - ControlLogix 5580 Process Controllers

Feature	1756-L81EP	1756-L83EP	1756-L85EP
Controller tasks	32 tasks, including a combination of continuous (1), periodic, and event tasks 1000 programs/task		
Built-in communication ports(7)	1 port USB(1) 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 (2)(3)	• 128,000 without CIP Security • 40,000 with integrity • 20,000 with integrity and confidentiality		
Message Rate Capacity HMI/MSG (Class 3) - messages/second (2)(3)	• 2000 without CIP Security • 1500 with integrity • 900 with integrity and confidentiality		
Communication options	• EtherNet/IP • ControlNet • DeviceNet • Data Highway Plus • Remote I/O • SERCOS • Third-party process and device networks		
EtherNet/IP nodes supported, max(4)	100 nodes	250 nodes	300 nodes
OPC UA nodes supported max(5)(6)	–	1200 nodes	15,000 nodes
Network connections per network module located in the local chassis	• ControlLogix 5580 Controllers front EtherNet/IP port. See 'EtherNet/IP nodes supported, max' in this table. • 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)		
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.(7)		
Programming languages	• Relay Ladder Logic (RLL) • Structured Text • Function Block Diagram • Sequential Function Chart (SFC)		

(1) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(2) I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Maximums assume that the processor is the target, not the originator. 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
(3) For information on integrity and confidentiality, see the CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001.
(4) 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, publication1756-UM543.
(5) 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.
(6) With Studio 5000 Logix Designer application version 36.00.00 or later.
(7) When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet, ControlNet, RIO, DH+ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.

Technical Specifications - ControlLogix 5580 Process Controllers

Attribute	1756-L81EP	1756-L83EP	1756-L85EP
User memory	3 MB	10 MB	40 MB
Digital I/O, max	128,000		
Analog I/O, max	4000		
Total I/O, max	128,000		
Optional nonvolatile memory storage	2 GB Secure Digital Card (1784-SD2), ships pre-installed in the controller(1)		
Energy storage module	Embedded in controller, nonremovable		
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-PA72, 1756-PA72K, 1756-PA75, 1756-PA75K, 1756-PB50, 1756-PB72, 1756-PB72K, 1756-PB75, 1756-PB75K, 1756-PH75, 1756-PC75		
Power supply, redundant	1756-PA75R, 1756-PA75RK, 1756-PB75R, 1756-PB75RK, 1756-PSCA2, 1756-PSCA2K		
Wire category(2)	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)		

(1) Larger versions may be available. See Controller Accessories on page 67.
(2) Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications - ControlLogix 5580 Process Controllers

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) ZXT Chassis -25 °C ≤ Ta ≤ +70 °C (-13°F ≤ Ta ≤ +158 °F) XT Chassis, Series C -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) Standard Chassis series B and C, XT Chassis series C, and ZXT Chassis
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Corrosive Atmosphere ASTM B845-97 Method K Accelerated Test (20-Day Exposure)	Severity Level G3(1) per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX(1)(2) per IEC 60721-3-3:2019, Chemically Active Substances
Vibration IEC 60068-2-6 (Test Fc, Operating)	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)	30 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz
EFT/B Immunity IEC 61000-4-4	±2 kV at 5 kHz on Ethernet ports
Surge Transient Immunity IEC 61000-4-5	±2 kV line-earth (CM) on Ethernet ports
Conducted RF Immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz

(1) Port Plugs must remain installed in unused ports at all times during storage and operation for the product to meet its corrosive atmosphere rating.
(2) Up to 86.4 g/(m2.yr), mass loss of copper due to corrosion.

Certifications - ControlLogix 5580 Process Controllers

Certification[1]	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	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
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
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) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements

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

ControlLogix 5570 Controllers

Features - ControlLogix 5570 Controllers

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

(1) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(2) ControlLogix 5570 controllers use connections to establish communication links between devices. For more information on how to use and calculate connections, see the ControlLogix System User Manual, publication 1756-UM001.

Technical Specifications - ControlLogix 5570 Controllers

Attribute	1756-L71, 1756-L71K	1756-L72, 1756-L72K	1756-L73, 1756-L73K	1756-L74, 1756-L74K	1756-L75, 1756-L75K
User memory	2 MB	4 MB	8 MB	16 MB	32 MB
I/O memory	0.98 MB				
Optional nonvolatile memory storage	1 GB (1784-SD1 ships with every controller) 2 GB (1784-SD2)				
Digital I/O max	128,000				
Analog I/O max	4000				
Total I/O max	128,000				
Energy storage module	• 1756-ESMCAP, 1756-ESMCAPK capacitor energy storage module (removable, ships installed with every controller) • 1756-ESMNSE, 1756-ESMNSEK capacitor energy storage module (removable, no residual WallClockTime power backup) • 1756-ESMNRM, 1756-ESMNRMK capacitor energy storage module (nonremovable, helps prevent USB connection and SD card use to help secure the controller)				
Current draw @ 1.2V DC	5 mA				
Current draw @ 5.1V DC	800 mA				
Power dissipation	2.5 W				
Thermal dissipation	8.5 BTU/hr				
Isolation voltage	30V (continuous), basic insulation type, USB port-to-system Compliant and tested according to IEC/UL 61010-1				
USB port(1)	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-PA72, 1756-PA72K, 1756-PA75, 1756-PA75K, 1756-PB50, 1756-PB72, 1756-PB72K, 1756-PB75, 1756-PB75K, 1756-PH75				
Power supply, redundant	1756-PA75R, 1756-PA75RK, 1756-PB75R, 1756-PB75RK, 1756-PSCA2, 1756-PSCA2K				
Wire category(2)	3 - on USB port				
Temperature code	T4				
Enclosure type rating	None (open-style)				

(1) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(2) Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications - ControlLogix 5570 Controllers

Attribute	1756-L71, 1756-L71K, 1756-L72, 1756-L72K, 1756-L73, 1756-L73K, 1756-L74K, 1756-L74, 1756-L75, 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
Corrosive Atmosphere[1] ASTM B845-97 Method H Accelerated Test (20-Day Exposure)	Severity Level G3[2][3] per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX[2] per IEC 60721-3-3:2019, Chemically Active Substances
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 (45 g with SD card installed)
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz
Conducted RF Immunity IEC 61000-4-6	Not applicable: USB is a temporary programming port.

(1) Only applicable to modules that end with a 'K'.
(2) Port Plugs must remain installed in unused ports at all times during storage and operation for the product to meet its corrosive atmosphere rating.
(3) Up to 9.6 microns per year, corrosion rate of copper.

Certifications - ControlLogix 5570 Controllers

Certification[1]	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	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
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
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) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements

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

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 environments.

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.

Features - ControlLogix-XT 5580 Controllers

Feature	1756-L81EXT	1756-L82EXT	1756-L83EXT	1756-L84EXT	1756-L85EXT
Controller tasks	32 tasks, including a combination of continuous (1), periodic, and event tasks 1000 programs/task				
Built-in communication ports[8]	1-port USB[1] 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 [2][3]	• 128,000 without CIP Security • 40,000 with integrity • 20,000 with integrity and confidentiality				
Message Rate Capacity HMI/MSG (Class 3) - messages/second [2][3]	• 2000 without CIP Security • 1500 with integrity • 900 with integrity and confidentiality				
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[4]	100 nodes	175 nodes	250 nodes	250 nodes	300 nodes
OPC UA nodes supported max[5][6]	—	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. See 'EtherNet/IP nodes supported, max' in this table. • 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)				
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[7]				
Programming languages	• Relay ladder logic (RLL) • Structured text • Function Block Diagram • Sequential function chart (SFC)				

(1) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(2) I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Maximums assume that the processor is the target, not the originator. 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.
(3) For information on integrity and confidentiality, see the CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001.
(4) 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, publication1756-UM543.
(5) 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.
(6) With Studio 5000 Logix Designer application version 36.00.00 or later.
(7) When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet, ControlNet, RIO, DH+™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.

Technical Specifications - ControlLogix-XT 5580 Controllers

Attribute	1756-L81EXT	1756-L82EXT	1756-L83EXT	1756-L84EXT	1756-L85EXT
User 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				
Optional nonvolatile memory storage	2 GB Secure Digital Card (1784-SD2), ships pre-installed in the controller(1)				
Energy storage module	Embedded in controller, nonremovable				
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-A7XT, 1756-A10XT, Series C 1756-A7ZXT, 1756-A10ZXT				
Power supply, standard	1756-PAXT, 1756-PBXT, 1756-PA30XT, 1756-PB30XT, 1756-PA72XT, 1756-PA75XT				
Power supply, redundant	—				
Wire category(2)	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)				

(1) Larger versions may be available. See Controller Accessories on page 67.
(2) Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications - ControlLogix-XT 5580 Controllers

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 IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing	
Corrosive Atmosphere • ASTM B845-97 Method K Accelerated Test (20-Day Exposure)	Severity Level G3[1] per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX[1][2] per IEC 60721-3-3:2019, Chemically Active Substances	–
• 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[3][4] per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX[3] per IEC 60721-3-3:2019, Chemically Active Substances
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)	30 g	
Emissions	IEC 61000-6-4	
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges	
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz	
EFT/B Immunity IEC 61000-4-4	±2 kV at 5 kHz on Ethernet ports	
Surge Transient Immunity IEC 61000-4-5	±2 kV line-earth (CM) on Ethernet ports	
Conducted RF Immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz	

(1) Port plugs/covers must remain installed in unused ports at all times during storage and operation for the product to maintain its corrosive atmosphere rating.
(2) Up to 86.4 g/(m2.yr), mass loss of copper due to corrosion.
(3) Port plugs/covers must remain installed in unused ports at all times, once the XT packaging seal is broken, for the product to maintain its corrosive atmosphere rating.
(4) Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity.

Certifications - ControlLogix-XT 5580 Controllers

Certification[1]	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	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
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
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[2]
TÜV certified for security	IEC 62443-4-2 SL1[2]
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements

(1) See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.
(2) With Studio 5000 Logix Designer application version 32.00.01 or later.

ControlLogix-XT 5580 NSE Controllers

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.

Features - ControlLogix-XT 5580 NSE Controllers

Feature	1756-L81E-NSEXT	1756-L82E-NSEXT	1756-L83E-NSEXT	1756-L84E-NSEXT	1756-L85E-NSEXT
Controller tasks	32 tasks, including a combination of continuous (1), periodic, and event tasks 1000 programs/task				
Built-in communication ports(8)	1-port USB(1) 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 (2)(3)	• 128,000 without CIP Security • 40,000 with integrity • 20,000 with integrity and confidentiality				
Message Rate Capacity HMI/MSG (Class 3) - messages/second (2)(3)	• 2000 without CIP Security • 1500 with integrity • 900 with integrity and confidentiality				
Communication options	• EtherNet/IP, ControlNet, DeviceNet, Data Highway Plus, Remote I/O, SERCOS(4), and Third-party process and device networks				
EtherNet/IP nodes supported max(5)	100 nodes	175 nodes	250 nodes	250 nodes	300 nodes
OPC UA nodes supported max(6)(7)	—	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. See 'EtherNet/IP nodes supported, max' in this table. • 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)				
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(8)				
Programming languages	• Relay ladder logic (RLL) • Structured text • Function Block Diagram • Sequential function chart (SFC)				

(1) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(2) I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Maximums assume that the processor is the target, not the originator. 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.
(3) For information on integrity and confidentiality, see the CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001.
(4) With Studio 5000 Logix Designer® application version 31.00.01 or later.
(5) 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.
(6) 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.
(7) With Studio 5000 Logix Designer application version 36.00.00 or later.
(8) When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet, ControlNet, RIO, DH+™ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.

Technical Specifications - ControlLogix-XT 5580 NSE Controllers

Attribute	1756-L81E-NSEXT	1756-L82E-NSEXT	1756-L83E-NSEXT	1756-L84E-NSEXT	1756-L85E-NSEXT
User 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				
Optional nonvolatile memory storage	2 GB Secure Digital Card (1784-SD2), ships pre-installed in the controller(1)				
Energy storage module	Embedded in controller, nonremovable				
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-A7XT, 1756-A10XT, Series C 1756-A7ZXT, 1756-A10ZXT				
Power supply, standard	1756-PAXT, 1756-PBXT, 1756-PA30XT, 1756-PB30XT, 1756-PA72XT, 1756-PA75XT				
Power supply, redundant	—				
Wire category(2)	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)				

(1) Larger versions may be available. See Controller Accessories on page 67.
(2) Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications - ControlLogix-XT 5580 NSE Controllers

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
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 Severity Level CX(1) per IEC 60721-3-3:2019, Chemically Active Substances
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)	30 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz
EFT/B Immunity IEC 61000-4-4	±2 kV at 5 kHz on Ethernet ports
Surge Transient Immunity IEC 61000-4-5	±2 kV line-earth (CM) on Ethernet ports
Conducted RF Immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz

(1) Port plugs/covers must remain installed in unused ports at all times, once the XT packaging seal is broken, for the product to maintain its corrosive atmosphere rating.
(2) Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity.

Certifications - ControlLogix-XT 5580 NSE Controllers

Certification[1]	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	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
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
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[2]
TÜV certified for security	IEC 62443-4-2 SL1[2]
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements

(1) See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.
(2) With Studio 5000 Logix Designer application version 32.00.01 or later.

ControlLogix-XT 5580 Process Controllers

The ControlLogix-XT 5580 process controllers function in the same way as traditional ControlLogix process controllers. The ControlLogix process controller's hardware is conformal-coated to a greater extent, providing further protection against harsh, corrosive environments, and can be used in temperature extremes from -25...+70 °C (-13...+158 °F) when deployed as part of a Logix-XT system.

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.

Features - ControlLogix-XT 5580 Process Controllers

Feature	1756-L81EPXT	1756-L83EPXT	1756-L85EPXT
Controller tasks	32 tasks, including a combination of continuous (1), periodic, and event tasks 1000 programs/task		
Built-in communication ports(7)	1 port USB(1) 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 (2) (3)	128,000 without CIP Security 40,000 with integrity 20,000 with integrity and confidentiality		
Message Rate Capacity HMI/MSG (Class 3) - messages/second (2) (3)	2000 without CIP Security 1500 with integrity 900 with integrity and confidentiality		
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(4)	100 nodes	250 nodes	300 nodes
OPC UA nodes supported max(5)(6)	–	1200 nodes	15,000 nodes
Network connections per network module located in the local chassis	ControlLogix 5580 Controllers front EtherNet/IP port. See 'EtherNet/IP nodes supported, max' in this table. 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)		
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.(7)		
Programming languages	Relay Ladder Logic (RLL) Structured Text Function Block Diagram Sequential Function Chart (SFC)		

(1) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(2) I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Maximums assume that the processor is the target, not the originator. 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
(3) For information on integrity and confidentiality, see the CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001.
(4) 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, publication1756-UM543.
(5) 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.
(6) With Studio 5000 Logix Designer application version 36.00.00 or later.
(7) When the controller is enabled for redundancy: the Ethernet port is off, Integrated motion is not supported, and DeviceNet, ControlNet, RIO, DH+ networks are not supported. See the Redundancy Systems User Manual, publication 1756-UM015.

Technical Specifications - ControlLogix-XT 5580 Process Controllers

Attribute	1756-L81EPXT	1756-L83EPXT	1756-L85EPXT
User memory	3 MB	10 MB	40 MB
Digital I/O, max	128,000		
Analog I/O, max	4000		
Total I/O, max	128,000		
Optional nonvolatile memory storage	2 GB Secure Digital Card (1784-SD2), ships pre-installed in the controller(1)		
Energy storage module	Embedded in controller, nonremovable		
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-A7XT, 1756-A10XT, Series C 1756-A7ZXT, 1756-A10ZXT		
Power supply, standard	1756-PAXT, 1756-PBXT, 1756-PA30XT, 1756-PB30XT, 1756-PA72XT, 1756-PA75XT		
Power supply, redundant	—		
Wire category(2)	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)		

(1) Larger versions may be available. See Controller Accessories on page 67.
(2) Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications - ControlLogix-XT 5580 Process Controllers

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
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 Severity Level CX(1) per IEC 60721-3-3:2019, Chemically Active Substances
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)	30 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz
EFT/B Immunity IEC 61000-4-4	±2 kV at 5 kHz on Ethernet ports
Surge Transient Immunity IEC 61000-4-5	±2 kV line-earth (CM) on Ethernet ports
Conducted RF Immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz

(1) Port plugs/covers must remain installed in unused ports at all times, once the XT packaging seal is broken, for the product to maintain its corrosive atmosphere rating.
(2) Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity.

Certifications - ControlLogix-XT 5580 Process Controllers

Certification[1]	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	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
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
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) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements

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

ControlLogix-XT 5570 Controller

Technical Specifications - 1756-L73XT Controller

Attribute	1756-L73XT
User memory	8 MB
I/O memory	0.98 MB
Optional nonvolatile memory	1 GB (1784-SD1 ships with every controller) 2 GB (1784-SD2)
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 (nonremovable, prevents USB connection and SD card use to help secure the controller)
Current draw @ 5.1V DC	800 mA
Current draw @ 1.2V DC	5 mA
Power dissipation	2.5 W
Thermal dissipation	8.5 BTU/hr
Isolation voltage	30V (continuous), basic insulation type, USB port to backplane Compliant and tested according to IEC/UL 61010-1
USB port(1)	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
Wire category(2)	3 - on USB ports
Temperature code	T4
Enclosure type rating	None (open-style)

(1) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(2) Use this conductor category information to plan conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications - 1756-L73XT Controller

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
Corrosive Atmosphere ASTM B845-97 Method H Accelerated Test (20-Day Exposure)	Severity Level G3[1] per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX[1][2] per IEC 60721-3-3:2019, Chemically Active Substances
Vibration IEC 60068-2-6 (Test Fc, Operating)	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 (45 g with SD card installed)
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz
Conducted RF Immunity IEC 61000-4-6	Not applicable: USB is a temporary programming port.

(1) Port Plugs must remain installed in unused ports at all times during storage and operation for the product to meet its corrosive atmosphere rating.
(2) Up to 9.6 microns per year, corrosion rate of copper.

Certifications - 1756-L73XT Controller

Certification[1]	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	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
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091, Electromagnetic Compatibility Regulations • 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
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) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements

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

GuardLogix Controllers

GuardLogix 5580 Controller with Safety Partner

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.

With the introduction of the GuardLogix 5580 controller, up to SIL 2/PLd (Category 3) can be achieved with one controller and the use of 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.

On the standard side of the GuardLogix controller, all 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.

These GuardLogix controllers have a conformal coating that adds a degree of protection against harsh, corrosive environments:

- GuardLogix 5580 controllers with a ‘K’ or ‘XT’ in the catalog number
- GuardLogix 5570 controllers with a ‘K’ or ‘XT’ in the catalog number

ATTENTION: The GuardLogix 5580 and 5570 conformal coated products are shipped with port protection plugs/covers installed to provide a degree of protection from corrosive atmospheres.
Once the factory packaging seal is broken, the port plugs/covers must remain installed in unused ports at all times for the product to maintain its corrosive atmosphere rating. If temporary access is required, plugs/covers can be removed, but should be reinserted/reapplied after temporary access is complete.

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.

GuardLogix 5580 Controllers

Features - GuardLogix 5580 Controllers

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/task Ethernet port					–
Built-in communication ports	1 port USB(1) 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 (2)(3)	• 128,000 without CIP Security • 40,000 with integrity • 20,000 with integrity and confidentiality					–
Message rate capacity HMI/MSG (Class 3) - messages/second (2)(3)						
with safety partner	• 1000 without CIP Security • 750 with integrity • 450 with integrity and confidentiality					–
without safety partner	• 2000 without CIP Security • 1500 with integrity • 900 with integrity and confidentiality					–
Communication options	• EtherNet/IP • ControlNet • DeviceNet • Data Highway Plus™ • Remote I/O • SERCOS • Third-party process and device networks					–
EtherNet/IP nodes supported, max(4)	100 nodes	175 nodes	250 nodes	250 nodes	300 nodes	–
OPC UA nodes supported max(5)(6)	–	900	1500	15000	15000	–
Network connections per network module in the local chassis	• GuardLogix 5580 Controllers front EtherNet/IP port. See 'EtherNet/IP nodes supported, max' in this table. • 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)					–

Features - GuardLogix 5580 Controllers (Continued)

Feature	1756-L81ES, 1756-L81ESK	1756-L82ES, 1756-L82ESK	1756-L83ES, 1756-L83ESK	1756-L84ES, 1756-L84ESK	1756-L85ES	1756-L8SP, 1756-L8SPK
Controller redundancy	Full support with Studio 5000 Logix Designer application version 37.00.00 or later(7)					–
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)					–

(1) The USB port is intended for temporary local programming purposes only and not intended for permanent connection. Do not use the USB port in hazardous locations.
(2) I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Maximums assume that the processor is the target, not the originator. Packet rates vary depending on packet size. See Troubleshoot EtherNet/IP Application Technique, publication ENET-AT003, and the EDS file for a specific catalog number.
(3) For information on integrity and confidentiality, see the CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001.
(4) 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 and GuardLogix 5580 Controllers User Manual, publication 1756-UM543.
(5) 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.
(6) With Studio 5000 Logix Designer application version 36.00.00 or later.
(7) 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, DH+™ networks are not supported. For details, see the Redundancy Systems User Manual, publication 1756-UM015.

Technical Specifications - GuardLogix 5580 Controllers

Attribute	1756-L81ES, 1756-L81ESK	1756-L82ES, 1756-L82ESK	1756-L83ES, 1756-L83ESK	1756-L84ES, 1756-L84ESK	1756-L85ES	1756-L8SP, 1756-L8SPK
User 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					–
Optional nonvolatile memory storage	2 GB Secure Digital Card (1784-SD2), ships pre-installed in the controller(1)					–
Energy storage module	Embedded, nonremovable					
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, Ethernet to backplane, USB to backplane, and USB to Ethernet 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 (the safety partner must be installed in the slot to the immediate 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-PA72, 1756-PA72K, 1756-PA75, 1756-PA75K, 1756-PB50, 1756-PB72, 1756-PB72K, 1756-PB75, 1756-PB75K, 1756-PH75, 1756-PC75					
Power supply, redundant	1756-PA75R, 1756-PA75RK, 1756-PB75R, 1756-PB75RK, 1756-PSCA2, 1756-PSCA2K					
Wire category(2)	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)					

(1) Larger versions may be available. See Controller Accessories on page 67.
(2) Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications -GuardLogix 5580 Controllers

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.
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)	Chassis series C and B: -40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Corrosive Atmosphere[1] ASTM B845-97 Method K Accelerated Test (20-Day Exposure)	Severity Level G3[2] per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX[2][3] per IEC 60721-3-3:2019, Chemically Active Substances
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)	30 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz 3V/m with 1 kHz sine wave 80% AM from 2700...6000 MHz
EFT/B Immunity IEC 61000-4-4	±2 kV at 5 kHz on Ethernet ports
Surge Transient Immunity IEC 61000-4-5	±2 kV line-earth (CM) on Ethernet ports
Conducted RF Immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz

(1) Only applicable to modules that end with a 'K'.
(2) Port plugs/covers must remain installed in unused ports at all times during storage and operation for the product to maintain its corrosive atmosphere rating.
(3) Up to 86.4 g/(m2.yr), mass loss of copper due to corrosion.

Certifications - GuardLogix 5580 Controllers

Certification[1]	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	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 ISO 13849-1; Safety-related parts of control systems • EN 62061; Functional safety of safety-related control systems • Up to Cat. 4/PL e 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 • Up to Cat. 3/PL d according to EN ISO 13849-1, and SIL CL 2 according to EN/IEC 62061 when not used in combination with the 1756-L8SP safety partner • TÜV 01/205/5611
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091 - Electromagnetic Compatibility Regulations • 2016 No. 1107 - Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032 - Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations • 2008 No. 1597 - Supply of Machinery (Safety) Regulations
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of Radio Waves Act, Clause 3
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products
TÜV certified for functional safety[2]	• Capable of 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.
CIP Security	ODVA conformance tested to CIP Security specifications[3]
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements

(1) See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.
(2) When used with specified firmware revisions. See the Product Safety Certificate at rok.auto/certifications for a full list of safety-related certifications.
(3) With Studio 5000 Logix Designer® application version 34.00.01 or later.

GuardLogix 5570 Controllers

Features - GuardLogix 5570 Controllers

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

Technical Specifications - GuardLogix 5570 Controllers

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

(1) Larger versions may be available. See Controller Accessories on page 67.
(2) Use this Conductor Category information to plan conductor routing. See Industrial Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications - GuardLogix 5570 Controllers

Attribute	1756-L71S, 1756-L72S, 1756-L73S, 1756-L7SP 1756-L71SK, 1756-L72SK, 1756-L73SK, 1756-L7SPK
Temperature, operating IEC 60068-2-1 (Test Ae, Operating Cold), IEC 60068-2-2 (Test Be, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0 °C ≤ Ta ≤ +60 °C (+32 °F ≤ Ta ≤ +140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Corrosive Atmosphere(1) ASTM B845-97 Method H Accelerated Test (20-Day Exposure)	Severity Level G3(2) per ANSI/ISA 71.04–2013, Airborne Contaminants—Gases Severity Level CX(2)(3) per IEC 60721-3-3:2019, Chemically Active Substances
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 (45 g with SD card installed)
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz
Conducted RF Immunity IEC 61000-4-6	Not applicable: USB is a temporary programming port.

(1) Only applicable to modules that end with a 'K'.
(2) Port Plugs must remain installed in unused ports at all times during storage and operation for the product to meet its corrosive atmosphere rating.
(3) Up to 9.6 microns per year, corrosion rate of copper.

Certifications - GuardLogix 5570 Controllers

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

(1) When marked. See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.
(2) When used with specified firmware revisions. See the Product Safety Certificate at the Product Certification website (rok.auto/certifications) for a full list of safety-related certifications.

GuardLogix-XT 5580 Controllers

The GuardLogix-XT™ 5580 controllers function the same way and share the same features as the GuardLogix 5580 Controllers. If you use a GuardLogix-XT 5580 primary controller on its own, you can achieve up to SIL 2 safety integrity. To achieve up to SIL 3 safety integrity, you must pair a GuardLogix-XT 5580 primary controller with a GuardLogix-XT safety partner. GuardLogix-XT 5580 controllers are conformal coated to add a degree of protection against harsh, corrosive environments.

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.

Technical Specifications - GuardLogix-XT 5580 Controllers

Attribute	1756-L81EXTS, 1756-L81ESXT	1756-L82EXTS, 1756-L82ESXT	1756-L83EXTS, 1756-L83ESXT	1756-L84EXTS, 1756-L84ESXT	1756-L8XTSP, 1756-L8SPXT
User 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				—
Total I/O, max	128,000				—
Optional nonvolatile memory storage	2 GB Secure Digital Card (1784-SD2), ships pre-installed in the controller(1)				—
Energy storage module	Embedded, nonremovable				
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, Ethernet to backplane, USB to backplane, and USB to Ethernet 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 (the safety partner must be installed in the slot to the immediate 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-PA75XT 1756-PB75XT				
Power supply, redundant	—				
Wire category(2)	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)				

(1) Larger versions may be available. See Controller Accessories on page 67.
(2) Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications - GuardLogix-XT 5580 Controllers

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 that are 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	
Corrosive Atmosphere • ASTM B845-97 Method K Accelerated Test (20-Day Exposure)	Severity Level G3[1] per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX[1][2] per IEC 60721-3-3:2019, Chemically Active Substances	–
• 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[3][4] per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX[3] per IEC 60721-3-3:2019, Chemically Active Substances
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)	30 g	
Emissions	IEC 61000-6-4	
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges	
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz 3V/m with 1 kHz sine wave 80% AM from 2700...6000 MHz	
EFT/B Immunity IEC 61000-4-4	±2 kV at 5 kHz on Ethernet ports	
Surge Transient Immunity IEC 61000-4-5	±2 kV line-earth (CM) on Ethernet ports	
Conducted RF Immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz	

(1) Port plugs/covers must remain installed in unused ports at all times during storage and operation for the product to maintain its corrosive atmosphere rating.
(2) Up to 86.4 g/(m2.yr), mass loss of copper due to corrosion.
(3) Port plugs/covers must remain installed in unused ports at all times, once the XT packaging seal is broken, for the product to maintain its corrosive atmosphere rating.
(4) Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity.

Certifications - GuardLogix-XT 5580 Controllers

Certification[1]	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.
CSA	CSA Certified Process Control Equipment. See CSA File 150115. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File 150115.
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations.
CE	European Union 2014/30/EU EMC Directive, compliant with: • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2006/42/EC MD, compliant with: • EN ISO 13849-1; Safety-related parts of control systems • EN 62061; Functional safety of safety-related control systems • Up to Cat. 4/PL e 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 • Up to Cat. 3/PL d according to EN ISO 13849-1, and SIL CL 2 according to EN/IEC 62061 when not used in combination with the 1756-L8SP safety partner • TÜV 01/205/5611
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091 - Electromagnetic Compatibility Regulations • 2016 No. 1107 - Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032 - Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations • 2008 No. 1597 - Supply of Machinery (Safety) Regulations
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of Radio Waves Act, Clause 3
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products
TÜV certified for functional safety[2]	• Capable of 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.
CIP Security	ODVA conformance tested to CIP Security specifications[3]
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements

(1) See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.
(2) When used with specified firmware revisions. See the Product Safety Certificate at rok.auto/certifications for a full list of safety-related certifications.
(3) With Studio 5000 Logix Designer application version 34.00.01 or later.

GuardLogix-XT 5570 Controllers

The 1756 GuardLogix-XT™ 5570 controllers function the same way and share the same features as the traditional GuardLogix 5570 Controllers. The GuardLogix-XT 5570 controllers are conformal coated to add a degree of protection against harsh, corrosive 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 now migrate to the K version of the chassis.

Technical Specifications - GuardLogix-XT 5570 Controllers

Attribute	1756-L73SXT	1756-L7SPXT
User memory	8 MB	—
Safety memory	4 MB	Configured to match primary controller
I/O memory	0.98 MB	
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 (nonremovable, 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 (nonremovable, helps prevent USB connection and SD card use to help secure the controller)
Current draw @ 1.2V DC	5 mA	
Current draw @ 5.1V DC	800 mA	
Power dissipation	2.5 W	
Thermal dissipation	8.5 BTU/hr	
Isolation voltage	30V (continuous), Basic Insulation, USB port to 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 (the safety partner must be in a slot to the right of the primary)	
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(1)	3 - on USB ports	
Temperature code	T4	
Enclosure type rating	None (open-style)	

(1) 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.

Environmental Specifications - GuardLogix-XT 5570 Controllers

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...+60 °C (-13...+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), 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
Corrosive Atmosphere ASTM B845-97 Method H Accelerated Test (20-Day Exposure)	Severity Level G3[1] per ANSI/ISA 71.04-2013, Airborne Contaminants—Gases Severity Level CX[1][2] per IEC 60721-3-3:2019, Chemically Active Substances
Vibration IEC 60068-2-6 (Test Fc, Operating)	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 (45 g with SD card installed)
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz
Conducted RF Immunity IEC 61000-4-6.	Not applicable: USB is a temporary programming port.

(1) Port Plugs must remain installed in unused ports at all times during storage and operation for the product to meet its corrosive atmosphere rating.
(2) Up to 9.6 microns per year, corrosion rate of copper.

Certifications - GuardLogix-XT 5570 Controllers

Certification[1]	1756-L73SXT, 1756-L7SPXT
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2006/42/EC MD, compliant with: • EN 60204-1; Electrical equipment of machines • EN ISO 13849-1; Safety-related parts of control systems • EN 62061; Functional safety of safety-related control systems
RCM	Australian Radiocommunications Act, compliant with EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091 - Electromagnetic Compatibility Regulations • 2016 No. 1107 - Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032 - Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations • 2008 No. 1597 - Supply of Machinery (Safety) Regulations
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of Radio Waves Act, Clause 3
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products
TÜV certified for functional safety[2]	Capable of SIL CL 3 according to IEC 61508, capable of Category 4 according to EN954-1, and capable of PLe according to ISO 13849-1 when used as described in the GuardLogix 5570 and Compact GuardLogix 5370 Controller Systems Safety Reference Manual, publication 1756-RM099.
Morocco	In conformity with the following regulations: • Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements

(1) When marked. See the Product Certification website at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.
(2) When used with specified firmware revisions. See the Product Safety Certificate at the Product Certification website (rok.auto/certifications) for a full list of safety-related certifications.

Armor ControlLogix and Armor GuardLogix Controllers

The 1756 Armor™ ControlLogix and Armor GuardLogix 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.

Features - Armor ControlLogix and Armor GuardLogix Controllers

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

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

Armor ControlLogix and Armor GuardLogix Controllers

Technical Specifications - Armor ControlLogix and Armor GuardLogix Controllers

Attribute	1756-L72ER0M	1756-L72ER0MS	1756-L73ER0M	1756-L73ER0MS
Standard memory	4 MB	4 MB	8 MB	8 MB
Safety memory	—	2 MB	—	4 MB
I/O memory	0.98 MB			
Optional nonvolatile memory storage	1 GB (1756-SD1 ships with every controller) 2 GB (1756-SD2)			
Digital I/O, max	128,000			
Analog I/O, max	4000			
Total I/O, max	128,000			
Input voltage range	18...32V DC			
Input voltage, nom	24V DC			
Input system power, pins 2 and 3	18...32V DC @ 8 A			
Input pass through power, pins 1 and 4	SELV 18...32V DC @ 8 A			
Output external power, pins 2 and 3	18...32V DC @ 6 A			
Output pass through power, pins 1 and 4	SELV 18...32V DC @ 8 A			
Fusing	Non-replaceable fuse is soldered in place(1)			
Isolation voltage	30V (continuous), Basic Insulation Type, Power to enclosure, Ethernet channels to Power, and non-redundant Ethernet channels to non-redundant Ethernet channels. No isolation between redundant Ethernet channels Compliant and tested according to IEC/UL 61010-1			
Weight, approx	7.04 kg (15.50 lb)	7.15 kg (15.725 lb)	7.04 kg (15.50 lb)	7.15 kg (15.725 lb)
Dimensions	240.0 x 292.0 x 164.52 mm (9.4 x 11.5 x 6.5 in.)			
Ethernet ports	4 Ethernet M12 Category 5E			
Ethernet cable	802.3 compliant shielded or unshielded twisted-pair			
USB port(2)	USB 1.1, full speed (12 Mbps)			
Wire Size	PE Ground: 1.3...5.2 mm^2 (16...0 AWG)			
Terminal block torque specifications	PE Ground: 2 N•m (17.7 lb•in)			
Wire category(3)	3 - on USB ports 2 - on power ports 2 - on Ethernet ports			
Enclosure type rating	UL Type 4/4x Meets IP67 (when marked) with receptacle dust caps or cable termination			

(1) This fuse is intended to guard against fire hazard due to short circuit conditions.
(2) The USB port is intended for temporary local programming purposes only and not intended for permanent connection.
(3) Use this Conductor Category information to plan conductor routing. See Industrial Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications - Armor ControlLogix and Armor GuardLogix Controllers

Attribute	1756-L72ER0M, 1756-L72ER0MS, 1756-L73ER0M, 1756-L73ER0MS
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)	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)	30 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80…2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000…2700 MHz 3V/m with 1 kHz sine wave 80% AM from 2700…6000 MHz
EFT/B immunity IEC 61000-4-4	±3 kV at 5 kHz and 100 kHz on Power Ports ±3 kV at 5 kHz and 100 kHz on Ethernet Ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±2 kV line-earth (CM) on Ethernet ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz…80 MHz
Voltage variation IEC 61000-4-29	10 ms interruption on DC supply ports

Certifications - Armor ControlLogix and Armor GuardLogix Controllers

Certification[1]	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	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
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091 - Electromagnetic Compatibility Regulations • 2012 No. 3032 - Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091 - Electromagnetic Compatibility 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
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 Radio Waves Act, Clause 3	
TÜV certified for functional safety[2]	–	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 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension • Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements	

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

Controller Compatibility

These tables provide information regarding controller compatibility with I/O modules, display devices, and other controllers and communication devices.

Control Distributed I/O Modules

The controller can control these distributed I/O modules via the I/O Configuration tree in the programming software.

I/O Modules	EtherNet/IP	ControlNet	DeviceNet	Remote I/O
Chassis-based I/O				
1715 Redundant I/O	Yes	No	No	No
1746 SLC™ I/O	Yes	No	No	Yes
1756 ControlLogix I/O	Yes	Yes	No	Yes
1769 Compact I/O™	Yes	No	Yes	Yes(1)
1771 Universal I/O	No	Yes	No	Yes
In-cabinet I/O				
1734 POINT I/O™	Yes	Yes	Yes	No
1734D POINTBlock I/O	No	No	Yes	No
1790, 1790D, 1790P CompactBlock™ LDX I/O	No	No	Yes	No
1791D, 1791P, 1791R CompactBlock I/O	No	No	Yes	No
1794 FLEX™ I/O	Yes	Yes	Yes	Yes
1797 FLEX Ex™ I/O	No	Yes	No	No
5069 Compact 5000® I/O (2)	Yes	No	No	No
5094 FLEX 5000® I/O(2)	Yes	No	No	No
On-Machine™ I/O				
1732 ArmorBlock® I/O	Yes	No	Yes	No
1738 ArmorPOINT® I/O	Yes	Yes	Yes	No
1792D ArmorBlock® MaXum™ I/O	No	No	Yes	No
1799 Embedded I/O	No	No	Yes	No

(1) With a third-party module.
(2) Compatible with ControlLogix 5580 controllers only.

Control Safety Distributed I/O Modules

The GuardLogix® controller can control these safety distributed I/O modules in a safety system.

I/O Modules	EtherNet/IP	ControlNet	DeviceNet
In-cabinet I/O			
1791DS CompactBlock™ Guard I/O™	No	No	Yes
1791ES CompactBlock Guard I/O	Yes	No	No
1734 POINT Guard I/O™	Yes	No	Yes
5069 Compact 5000 Safety I/O(1)	Yes	No	No
5094 FLEX 5000 Safety I/O(1)	Yes	No	No
On-Machine™ I/O			
1732DS ArmorBlock® Guard I/O™	No	No	Yes
1732ES ArmorBlock Guard I/O	Yes	No	No

(1) Compatible with ControlLogix 5580 controllers only.

Communicate with Display Devices

The controller can communicate with these display devices.

Display Devices	EtherNet/IP	ControlNet	DeviceNet	DH+	Remote I/O	RS-232 (DF1)
Industrial Computers						
Allen-Bradley® industrial computers (all)[1]	Yes	Yes	Yes	Yes	Yes	Yes
Graphic Terminals						
PanelView™ Plus and PanelView e terminals	Yes	Yes	Yes	Yes	Yes	Yes
PanelView Standard terminals	Yes	Yes	Yes	Yes	Yes	Yes
PanelView e terminals	No	Yes	No	Yes	Yes	No
Message Displays						
InView™ message displays	Yes	Yes	Yes	Yes	Yes	Yes

(1) Includes Allen-Bradley® integrated display rotating media (HDD) and solid-state (SSD) computers, Rockwell Automation® non-display computers, and Allen-Bradley® integrated display computers with keypad.

Communicate with Other Controllers

The controller can communicate with these programmable controllers.

Controller	EtherNet/IP	ControlNet	DeviceNet	DH+™	RS-232 (DF1)	DH-485[1]
1756 ControlLogix 1756 GuardLogix®	Yes	Yes	Yes	Yes	Yes	Yes
5069 CompactLogix® 5069 Compact GuardLogix	Yes	No	No	No	No	No
1768, 1769 CompactLogix 1768, 1769 Compact GuardLogix	Yes	Yes	Yes	No	Yes	Yes
1789 SoftLogix™ 5800	Yes	Yes	Yes	No	Yes	No
1794 FlexLogix™	Yes	Yes	Yes	No	Yes	Yes
PowerFlex® with DriveLogix™	Yes	Yes	Yes	No	Yes	Yes
1785 PLC-5®[2][3][4]	Yes	Yes	Yes	Yes	Yes	No
1747 SLC™[5]	Yes	Yes	Yes	Yes	Yes	Yes
1761 MicroLogix™[5]	Yes	No	Yes	No	Yes	Yes
1762 MicroLogix[5]	Yes	No	Yes	No	Yes	Yes
1763 MicroLogix [5]	Yes	No	Yes	No	Yes	Yes
1764 MicroLogix [5]	Yes	No	Yes	No	Yes	Yes
1772 PLC-2®	No	No	No	Yes	Yes	No
1775 PLC-3®	No	No	No	Yes	Yes	No
5250 PLC-5/250	No	No	No	Yes	Yes	No

(1) The 1756-DH485 module supports full DH-485 functionality.
(2) The Ethernet PLC-5 controller must be series C, firmware revision N.1 or later; series D, firmware revision E.1 or later; or series E, firmware revision D.1 or later.
(3) The 1785-ENET Ethernet communication interface module must be series A, firmware revision D or later.
(4) The PLC-5, SLC, and MicroLogix processors appear as I/O points to the Logix controller. Use the appropriate DeviceNet® interface for the controller.
(5) Use a 1747-L55x controller with OS501 or later.

Communicate with Other Communication Devices

The controller can communicate with these communication devices.

Communication Device	EtherNet/IP	ControlNet	DeviceNet	DH+
Linking device	–	1788-CN2DN 1788-CN2FF	1788-EN2DNR 1788-EN2DNROM (on-machine version) 1788-CN2DN	–
PCMCIA card	–	1784-PCC	1784-PCD	1784-PCMK
PCI card	–	1784-PCIC 1784-PCICS	1784-PCID 1784-PCIDS 1784-CPCIDS	–
Drives SCANport™ module (1)	1203-EN1 1203-CN1	1203-FM1 1203-FB1	–	–
Communication module (2)	–	1770-KFC15 1770-KFCD15 1747-KFC15	1770-KFD 1770-KFG	1770-KF2
Communication card	–	1784-PKTCS 1784-KTCS 1784-KTCX15	1784-PKTX 1784-PKTXD	–
USB communication device	–	1784-U2CN	1784-U2DN	1784-U2DHP

(1) Use a CIP™ generic MSG instruction to communicate with the 1203-FM1 SCANport module on a DIN rail that is remote to the controller. The remote DIN rail also requires a 1794-ACN15 or 1794-ACNR15 ControlNet adapter.
(2) Use the generic module configuration to configure the 1203-CN1 module and a CIP generic MSG instruction to communicate with the module.

Notes:

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 redundancy system requirements, see the Redundancy Systems User Manual, publication 1756-UM015.

1756-RM3 Redundancy Modules

Technical Specifications - 1756-RM3 Redundancy Modules

Attribute	1756-RM3, 1756-RM3-2SFP(1)
Current draw @ 5.1V DC	1 A
Current draw @ 1.2V 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 multimode fiber-optic cable 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
Slot width	1 slot
Module location	Chassis-based, any slot
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17
Controller families, supported	ControlLogix 5570, ControlLogix 5580
Power supply, standard	1756-PA72, 1756-PA75, 1756-PB72, 1756-PB75
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
Micro secure digital (microSD) card	1784-MSD8 (8 GB)
SFP fiber-optic transceivers(2)	Singlemode: 1783-SFP1GLX 1783-SFP1GEXE 1783-SFP1GZX Multimode: 1783-SFP1GSX

(1) 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. See Use Fiber-optic Cable Compatible with Selected SFP Fiber-optic Transceiver.

(2) For SFP transceiver specifications, see Small Form-factor Pluggable (SFP) Transceivers.

Environmental Specifications - 1756-RM3 Redundancy Modules

Attribute	1756-RM3, 1756-RM3-2SFP	
	Standard Chassis, Series B	Standard Chassis, Series 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)	0 °C ≤ Ta ≤ +50 °C (+32 °F ≤ Ta ≤ +122 °F)	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	
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)	30 g	
Emissions	IEC 61000-6-4	
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges	
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...6000 MHz	

Certifications - 1756-RM3 Redundancy Modules

Certification[1]	1756-RM3, 1756-RM3-2SFP
CE	European Union 2014/30/EU EMC Directive, compliant with: • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
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.
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 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
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 UL24UKEX2995X • 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
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

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

1756-RM3XT Redundancy Modules

Technical Specifications - 1756-RM3XT Redundancy Modules

Attribute	1756-RM3XT
Current draw @ 5.1V DC	1 A
Current draw @ 1.2V 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 multimode fiber-optic cable 50/125 µm multimode fiber-optic cable
Channels	2 (transmit and receive fiber)
Connector cables, singlemode only	1756-RMC1, 1 m (3.28 ft) 1756-RMC3, 3 m (9.84 ft) 1756-RMC10, 10 m (32.81 ft)
Conformal coating	Yes
Slot width	1 slot
Module location	Chassis-based, any slot
Chassis	1756-A7XT, 1756-A7ZXT, 1756-A10XT
Controller families, supported	ControlLogix 5570, ControlLogix 5580
Power supply, standard	1756-PAXT, 1756-PBXT
Power supply, redundant	None
Temperature code	T4
Enclosure type	None (open-style)
Weight, approx	0.29 kg (0.64 lb)
Mounting	ControlLogix-XT chassis, single-slot module
Micro secure digital (microSD™) card	1784-MSD8XT (8 GB)
SFP fiber-optic transceivers(1)	Singlemode: 1783-SFP1GLX-XT Multimode: 1783-SFP1GSX-XT

(1) For SFP transceiver specifications, see Small Form-factor Pluggable (SFP) Transceivers.

Environmental Specifications - 1756-RM3XT Redundancy Modules

Attribute	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 ≤ +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)	30 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...6000 MHz
Corrosive atmosphere ASTM B845-97 Method K Accelerated Test (30-day exposure) Plus 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 Severity Level CX(1) per IEC 60721-3-3:2019, Chemically Active Substances

(1) Port plugs/covers must remain installed in unused ports at all times, once the XT packaging seal is broken, for the product to maintain its corrosive atmosphere rating.
(2) Up to 2100 angstroms of film growth per 30 days of copper and/or silver reactivity.

Certifications - 1756-RM3XT Redundancy Modules

Certification[1]	1756-RM3XT
CE	European Union 2014/30/EU EMC Directive, compliant with: • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
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.
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 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
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 UL24UKEX2995X • 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
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

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

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 transceivers used in 1756-RM2 modules (PN-91972) can also be used in 1756-RM3 modules. For transceiver PN-91972 specifications, see the ControlLogix Redundancy Modules Installation Instructions, publication 1756-IN087.

Use a Compatible SFP Fiber-optic Transceiver and the Maximum Cable Length for Intended 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.

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-SFP1GLX-XT	1000Base-LX/LH singlemode fiber	Dual LC	1310	G.652	–	20 km (65,616 ft)	-3 (max)...-9 (min)	-3 (max)...-23 (min)
1783-SFP1GSX-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)		

(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.

Use Fiber-optic Cable Compatible with Selected SFP Fiber-optic Transceiver

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.

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

Technical Specifications - 1756-RM2 Redundancy Modules

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)
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

Environmental Specifications - 1756-RM2 Redundancy Modules

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)	2 g @ 10...500 Hz	2 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g	50 g
Emissions	IEC 61000-6-4	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz	

Certifications - 1756-RM2 Redundancy Modules

Certification[1]	1756-RM2, 1756-RM2K	1756-RM2XT
CE	European Union 2014/30/EU EMC Directive, compliant with: • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)	
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.	
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 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	
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	
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	

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

Notes:

Controller Accessories

You can use these accessories with ControlLogix and GuardLogix controllers.

Memory Cards

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

- The ControlLogix 5580 and GuardLogix 5580 controllers come with the 1784-SD2 Secure Digital (SD) card installed and support optional 1784-SD1, 1784-SDHC8, and 1785-SDHC32 cards purchased separately.
- The ControlLogix 5570 and GuardLogix 5570 controllers come with the 1784-SD1 Secure Digital (SD) card installed and support optional 1784-SD2 cards purchased separately.

The memory cards are installed in a socket on the controller. 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.

Technical Specifications - 1784 Memory Cards

Attribute	1784-SD1	1784-SD2	1784-SDHC8	1784-SDHC32
Memory	1 GB	2 GB	8 GB	32 GB
Supported controllers	1756-L71, 1756-L71K, 1756-L71S, 1756-L71SK, 1756-L72, 1756-L72K, 1756-L72S, 1756-L72SK, 1756-L72EROM, 1756-L72EROMS, 1756-L73, 1756-L73K, 1756-L73S, 1756-L73SK, 1756-L73EROM, 1756-L73EROMS, 1756-L73XT, 1756-L73SXT, 1756-L74, 1756-L74K, 1756-L75, 1756-L75K		–	
	1756-L81E, 1756-L81EK, 1756-L81ES, 1756-L81ESK, 1756-L81ESXT, 1756-L81EXT, 1756-L81EXTS, 1756-L82E, 1756-L82EK, 1756-L82ES, 1756-L82ESK, 1756-L82ESXT, 1756-L82EXT, 1756-L82EXTS, 1756-L83E, 1756-L83EK, 1756-L83ES, 1756-L83ESK, 1756-L83ESXT, 1756-L83EXT, 1756-L83EXTS, 1756-L84E, 1756-L84EK, 1756-L84ES, 1756-L84ESK, 1756-L84ESXT, 1756-L84EXT, 1756-L84EXTS, 1756-L85E, 1756-L85EK, 1756-L85ES, 1756-L85EXT 1756-L81E-NSE, 1756-L82E-NSE, 1756-L83E-NSE, 1756-L84E-NSE, 1756-L85E-NSE 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)			

Environmental Specifications - 1784 Memory Cards

Attribute	1784-CF128, 1784-SD1, 1784-SD2, 1784-SDHC8, 1784-SDHC32
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)	-25...+70 °C (-13...+158 °F)
Temperature, storage 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 CISPR 11	Group 1, Class A
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz

Certifications - 1784 Memory Cards

Certification(1)	1784-CF128, 1784-SD1, 1784-SD2, 1784-SDHC8, 1784-SDHC32
CE	European Union 2004/108/EC 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
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of Radio Waves Act, Clause 3

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

Energy Storage Modules

These energy storage modules are available for ControlLogix 5570 and GuardLogix 5570 controllers.

Standard Energy Storage Modules

Instead of a battery, the 1756-L7 and 1756-L7S controllers are shipped with a 1756-ESMCAP energy storage module (ESM) already installed.

Technical Specifications - 1756-L7 and 1756-L7S Energy Storage Modules[1]

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

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

Environmental Specifications - 1756-L7 and 1756-L7S Energy Storage Modules

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
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	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz

Certifications - 1756-L7 and 1756-L7S Energy Storage Modules

Certification[1]	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	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
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091 - Electromagnetic Compatibility Regulations • 2016 No. 1107 - Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032 - Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations • 2008 No. 1597 - Supply of Machinery (Safety) Regulations
KC	Korean Registration of Broadcasting and Communication 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

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

Extreme Temperature Energy Storage Modules

The 1756-L73XT and the 1756-L73SXT extreme temperature controllers are shipped with a 1756-ESMCAPXT installed.

Technical Specifications - 1756 Extreme Temperature Energy Storage Modules

Attribute	1756-ESMCAPXT	1756-ESMNSEXT	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 (nonremovable, 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)		

Environmental Specifications - 1756 Extreme Temperature Energy Storage Modules

Attribute	1756-ESMCAPXT	1756-ESMNSEXT	1756-ESMNRMXT
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	6 kV contact discharges 8 kV air discharges		
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz		

Certifications - 1756 Extreme Temperature Energy Storage Modules

Certification[1]	1756-ESMCAPXT, 1756-ESMNSEXT, 1756-ESMNRMXT
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	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
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091 - Electromagnetic Compatibility Regulations • 2016 No. 1107 - Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032 - Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations • 2008 No. 1597 - Supply of Machinery (Safety) Regulations
KC	Korean Certification of Broadcasting and Communication 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

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

GuardLogix Safety Partner Energy Storage Modules

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

Technical Specifications - 1756-L7SP Safety Partner Energy Storage Modules(1)

Attribute	1756-SPESMNSE, 1756-SPESMNSEK	1756-SPESMNRM
Description	Capacitor energy storage module for the 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 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 for the safety partner (nonremovable, 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)	

(1) The energy storage modules for the On-Machine controllers are not field-accessible and must be returned to Rockwell Automaton for maintenance or replacement.

Environmental Specifications - 1756-L7SP 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)	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	
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	6 kV contact discharges 8 kV air discharges	
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80…2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000…2700 MHz	

Certifications - 1756-L7SP Safety Partner Energy Storage Modules

Certification[1]	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	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
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091 - Electromagnetic Compatibility Regulations • 2016 No. 1107 - Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032 - Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations • 2008 No. 1597 - Supply of Machinery (Safety) Regulations
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of Radio Waves Act, Clause 3
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products

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

GuardLogix-XT Safety Partner Energy Storage Modules

The 1756-L7SPXT extreme-temperature safety partner is shipped with a 1756-SPESMNSEXT energy storage module installed.

Technical Specifications - 1756-L7SPXT Extreme-temperature Safety Partner Energy Storage Modules

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 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 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)	

Environmental Specifications - 1756-L7SPXT Extreme-temperature Safety Partner Energy Storage Modules

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	6 kV contact discharges 8 kV air discharges	
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz	

Certifications - 1756-L7SPXT Extreme-temperature Safety Partner Energy Storage Modules

Certification[1]	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	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
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN IEC 60079-0; General Requirements • EN IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • II 3 G Ex ec IIC T4 Gc • UL 22 ATEX 2817X
IECEx	IECEx System, compliant with: • IEC 60079-7; Potentially Explosive Atmospheres, Protection “e” • IEC 60079-0; General Requirements • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0062X
UKEx	In conformity with the following UKEx Statutory Instruments and their amendments: • Schedule 1 of the UKEx Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2601X • Zone 2 classification according to UKEx Regulation 2016 No. 1107
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 2016 No. 1091 - Electromagnetic Compatibility Regulations • 2016 No. 1107 - Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations • 2012 No. 3032 - Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations • 2008 No. 1597 - Supply of Machinery (Safety) Regulations
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with Article 58-2 of Radio Waves Act, Clause 3
CCC	CCC 2020122309111998 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products

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

Ethernet and USB Port Protection Plugs

These controllers are shipped with port protection plugs installed to provide a degree of protection from corrosive atmospheres:

ControlLogix 5580 Catalog Numbers:	1756-L81EK, 1756-L82EK, 1756-L83EK, 1756-L84EK, 1756-L85EK 1756-L81E-NSE, 1756-L82E-NSE, 1756-L83E-NSE, 1756-L84E-NSE, 1756-L85E-NSE 1756-L81E-NSEXT, 1756-L82E-NSEXT, 1756-L83E-NSEXT, 1756-L84E-NSEXT, 1756-L85E-NSEXT 1756-L81EXT, 1756-L82EXT, 1756-L83EXT, 1756-L84EXT, 1756-L85EXT 1756-L81EP, 1756-L83EP, 1756-L85EP 1756-L81EPXT, 1756-L83EPXT, 1756-L85EPXT
GuardLogix 5580 Catalog Numbers:	1756-L81ESK, 1756-L82ESK, 1756-L83ESK, 1756-L84ESK, 1756-L8SPK 1756-L81EXTS, 1756-L82EXTS, 1756-L83EXTS, 1756-L84EXTS, 1756-L8XTSP 1756-L81ESXT, 1756-L82ESXT, 1756-L83ESXT, 1756-L84ESXT, 1756-L8SPXT
ControlLogix 5570 Catalog Numbers:	1756-L71K, 1756-L72K, 1756-L73K, 1756-L74K, 1756-L75K 1756-L73XT
GuardLogix 5570 Catalog Numbers:	1756-L71SK, 1756-L72SK, 1756-L73SK, 1756-L7SPK 1756-L73SXT, 1756-L7SPXT

You can order replacement plugs directly from the distributor.

Rockwell Automation Part Number	Description	Supplier	Supplier Part Number	Distributor
PN-579024	Plug for Ethernet Port	Würth Elektronik	726154101	Digi-Key: 726154101
PN-579028	Plug for USB Port	Essentra Components	CP-USB-B-429[1]	Essentra Components: CP-USB-B-429

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

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 5580 and GuardLogix 5580 Controllers User Manual, publication 1756-UM543	Describes how to use a ControlLogix 5580 or GuardLogix® 5580 controller.
ControlLogix I/O Specifications Technical Data, publication 1756-TD002	Provides technical specifications for ControlLogix I/O modules.
ControlLogix Communication Modules Specifications Technical Data, publication 1756-TD003	Provides technical specifications for ControlLogix communication modules.
ControlLogix Power Supplies Specifications Technical Data, publication 1756-TD005	Provides technical specifications for ControlLogix power supplies.
ControlLogix Chassis Specifications Technical Data, publication 1756-TD006	Provides chassis specifications, including spacing requirements, mounting dimensions, and available accessories.
GuardLogix 5580 and Compact GuardLogix 5380 Controllers Safety Reference Manual, publication 1756-RM012	Provides information on safety application requirements for GuardLogix 5580 and Compact GuardLogix 5380 controllers.
Logix SIS Safety Reference Manual, publication 1756-RM015	Describes Logix SIS systems, which are type-approved and certified for use in safety applications.
Redundancy Systems User Manual, publication 1756-UM015	Provides information about how to set up, configure, program, monitor, and troubleshoot high availability systems that use Logix SIS, ControlLogix 5580, or ControlLogix 5570 redundancy.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-state Control, publication SGI-1.1	Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies incorporating solid-state components.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Selection and Configuration tools, rok.auto/systemtools	Helps configure complete, valid catalog numbers, and build complete quotes based on detailed product information.
Rockwell Automation Global SCCR tool, rok.auto/sccr	Provides coordinated high-fault branch circuit solutions for motor starters, soft starters, and component drives.
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, Knowledgebase, and product notification updates.	rok.auto/support
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
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)	Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.	rok.auto/pcdc

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

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