

1756 ControlLogix Controllers

ControlLogix Controller Catalog Numbers

1756-L61, 1756-L62, 1756-L63, 1756-L63XT, 1756-L64, 1756-L65, 1756-L71,
1756-L72, 1756-L73, 1756-L73XT, 1756-L74, 1756-L75, 1756-L83E, 1756-L85E

GuardLogix Controller Catalog Numbers 1756-L61S, 1756-L62S, 1756-L63S, 1756-LSP, 1756-L71S, 1756-L72S, 1756-L73S,
1756-L7SP, 1756-L73SXT, 1756-L7SPXT

Armor ControlLogix Catalog Number 1756-L72EROM

Armor GuardLogix Catalog Number 1756-L72EROMS

ControlLogix Redundancy Catalog Numbers 1756-RM, 1756-RMXT, 1756-RM2, 1756-RM2XT

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1756 ControlLogix Controllers

The ControlLogix® controller provides a scalable controller solution that is capable of addressing a large amount of I/O points. You can place the ControlLogix 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, as well as 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 or ControlLogix 5560 controllers, install the appropriate communication interface module into the local chassis.

ControlLogix 5580 Controllers Features and Specifications

Feature	1756-L83E	1756-L85E
Controller tasks	32 tasks 1000 programs/task Local I/O event triggers: No limit	
Built-in communication ports	1 port USB ⁽¹⁾ Embedded EtherNet port	
USB port communication	USB 2.0 Full speed (12 Mbps) Programming, configuration, firmware flash and on-line edits only	
Ethernet performance	10/100/1000 Mbps	
Communication options	<ul style="list-style-type: none"> • EtherNet/IP™ • ControlNet™ • DeviceNet™ • Data Highway Plus™ • Remote I/O • SynchLink™ • Third-party process and device networks 	
EtherNet/IP nodes supported, max	100 nodes	300 nodes
Network connections, per network module located in the local chassis	<ul style="list-style-type: none"> • See "EtherNet/IP nodes supported, max" (ControlLogix 5580 Controllers) • 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	N/A	
Integrated motion	<ul style="list-style-type: none"> • EtherNet/IP (CIP Motion) 	
Programming languages	<ul style="list-style-type: none"> • Relay Ladder • 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.

Table 1 - Technical Specifications - ControlLogix 5580 Controllers

Attribute	1756-L83E	1756-L85E
User memory	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	
Energy storage module	Embedded in controller, nonremovable	
Current draw @ 1.2V DC	5.0 mA	
Current draw @ 5.1V DC	1.20 A	
Power dissipation	6.2 W	
Thermal dissipation	8.5 BTU/hr	
Isolation voltage	50V (continuous), Basic Insulation type, USB port to backplane, Ethernet port to backplane, and USB port to Ethernet port Type tested at 1000V AC for 60 seconds	
Weight, approx	0.394 kg (.868 lb)	
Slot width	1	
Module location	Chassis-based, any slot	
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17 Series B, Series C	
Power supply, standard	1756-PA72, 1756-PA75, 1756-PB72, 1756-PB75, 1756-PH75, 1756-PC75	
Wire category ⁽¹⁾	3 - on USB port 2 - on Ethernet ports	
Wire size	Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2	
North American temperature code	T4	
ATEX temperature code	T4	
IECEx temperature code	T4	
Enclosure type rating	None (open-style)	

(1) Use this conductor category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Table 2 - Environmental Specifications - ControlLogix 5580 Controllers

Attribute	1756-L83E, 1756-L85E
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)	Chassis series C: 0 °C < Ta < +60 °C +32 °F < Ta < +140 °F Chassis series B: 0 °C < Ta < +50 °C +32 °F < Ta < +122 °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)	Chassis series B and C: -40...85 °C (-40...185 °F)
Temperature, surrounding air, max	Chassis series C: 60 °C (140 °F) Chassis series B: 50 °C (122 °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...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

Table 3 - Certifications - ControlLogix 5580 Controllers

Certification⁽¹⁾	1756-L83E, 1756-L85E
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 LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations
CE	European Union 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> 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 Radio communications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-15; Potentially Explosive Atmospheres, Protection 'n' EN 60079-0; General Requirements II 3 G Ex nA IIC T4 Gc DEMKO13ATEX1325026X
IECEX	IECEX System, compliant with: <ul style="list-style-type: none"> IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" IEC 60079-0; General Requirements II 3 G Ex nA IIC T4 Gc IECEX UL 14.0008X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation
EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications

(1) See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

ControlLogix 5570 Controllers Features and Specifications

Feature	1756-L71, 1756-L72, 1756-L73, L73XT, 1756-L74, 1756-L75
Controller tasks	<ul style="list-style-type: none"> • 32 tasks • 100 programs/task • Event tasks: all event triggers
Built-in communication ports	1 port USB ⁽¹⁾
Communication options	<ul style="list-style-type: none"> • EtherNet/IP™ • ControlNet™ • DeviceNet™ • Data Highway Plus™ • Remote I/O • SynchLink™ • Third-party process and device networks
USB port communication	Programming, configuration, firmware flash and on-line edits only
Controller connections supported, max	500
Network connections, per network module	<ul style="list-style-type: none"> • 100 ControlNet (1756-CN2/A) • 40 ControlNet (1756-CNB/D, 1756-CNB/E) • 128 ControlNet (1756-CN2/B) • 256 EtherNet/IP; 128 TCP (1756-EN2x) • 128 EtherNet/IP; 64 TCP (1756-ENBT)
Controller redundancy	Full support
Integrated motion	<ul style="list-style-type: none"> • SERCOS interface • Analog options (encoder input, LDT input, SSI input) • EtherNet/IP (CIP Motion)
Programming languages	<ul style="list-style-type: none"> • Relay ladder • 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.

Table 4 - Technical Specifications - ControlLogix 5570 Controllers

Attribute	1756-L71	1756-L72	1756-L73	1756-L74	1756-L75
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	<ul style="list-style-type: none"> 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, secures controller by preventing USB connection and SD card use) 				
Current draw @ 1.2V DC	5 mA				
Current draw @ 5.1V DC	800 mA				
Power dissipation	2.5 W				
Thermal dissipation	8.5 BTU/hr				
Isolation voltage	30V (continuous), basic insulation type, USB port-to-system Type tested at 500V AC for 60 s				
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-A7, 1756-A10, 1756-A13, 1756-A17				
Power supply, standard	1756-PA72, 1756-PA75, 1756-PB72, 1756-PB75				
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2				
Wire category ⁽²⁾	3 - on USB port				
North American temperature code	T4A				
IEC 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 for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Table 5 - Environmental Specifications - ControlLogix 5570 Controllers

Attribute	1756-L71, 1756-L72, 1756-L73, 1756-L74, 1756-L75
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...85 °C (-40...185 °F)
Temperature, surrounding air, max	60 °C (140 °F)
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 (45 g with SD card installed)
Emissions CISPR 11 IEC 61000-6-4	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
Conducted RF Immunity IEC 61000-4-6	Not applicable: USB is a temporary programming port.

Table 6 - Certifications - ControlLogix 5570 Controllers

Certification ⁽¹⁾	1756-L71, 1756-L72, 1756-L73, 1756-L74, 1756-L75
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 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radio communications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-15; Potentially Explosive Atmospheres, Protection 'n' EN 60079-0; General Requirements II 3 G Ex nA IIC T4 X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

ControlLogix 5560 Controllers Features and Specifications

Feature	1756-L61, 1756-L62, 1756-L63, L63XT, 1756-L64, 1756-L65
Controller tasks	<ul style="list-style-type: none"> • 32 tasks • 100 programs/task • Event tasks: all event triggers
Built-in communication ports	1 port RS-232 serial
Communication options	<ul style="list-style-type: none"> • EtherNet/IP • ControlNet • DeviceNet • Data Highway Plus™ • Remote I/O • SynchLink™ • Third-party process and device networks
Serial port communication	<ul style="list-style-type: none"> • ASCII • DF1 full/half-duplex • DF1 radio modem • DH-485 • Modbus via logic
Controller connections supported, max	250
Network connections, per network module	<ul style="list-style-type: none"> • 100 ControlNet (1756-CN2/A) • 40 ControlNet (1756-CNB/D, 1756-CNB/E) • 128 ControlNet (1756-CN2/B) • 256 EtherNet/IP; 128 TCP (1756-EN2x) • 128 EtherNet/IP; 64 TCP (1756-ENBT)
Controller redundancy	Full support
Integrated motion	<ul style="list-style-type: none"> • SERCOS interface • Analog options (encoder input, LDT input, SSI input) • EtherNet/IP (CIP Motion)
Programming languages	<ul style="list-style-type: none"> • Relay ladder • Structured text • Function block • SFC

IMPORTANT Scan time for a project loaded in a 1756-L64 or 1756-L65 controller may be slower than for the same project loaded in one of the other 1756-L6x controllers. See the Logix5000™ Controllers Instruction Execution Time and Memory Use Reference Manual, publication [1756-RM087](#), for instruction execution times.

Table 7 - Technical Specifications - ControlLogix 5560 Controllers

Attribute	1756-L61	1756-L62	1756-L63	1756-L64	1756-L65
User memory	2 MB	4 MB	8 MB	16 MB	32 MB
I/O memory	478 KB				
Optional nonvolatile memory storage	128 MB (1784-CF128)				
Digital I/O, max	128,000				
Analog I/O, max	4000				
Total I/O, max	128,000				
Replacement battery ⁽¹⁾	Series A: 1756-BA1, 1756-BATM, 1756-BATA Series B: 1756-BA2			1756-BA2 (0.50 g Lithium)	
Current draw @ 5.1V DC	1200 mA				
Current draw @ 24V DC	14 mA				
Power dissipation	3.5 W				
Thermal dissipation	11.9 BTU/hr				
Isolation voltage	30V (continuous), basic insulation type, RS-232 to system Type tested at 720V DC for 60 s				
Serial cables	1756-CP3 or 1747-CP3, right angle connector to controller, straight to serial port, 3 m (9.84 ft)				
Weight, approx	Series A: 0.32 kg, (0.71 lb) Series B: 0.35 kg, (0.78 lb)				
Slot width	1				
Module location	Chassis-based, any slot				
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17				
Power supply, standard	1756-PA72, 1756-PA75, 1756-PB72, 1756-PB75				
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2				
Wire category ⁽²⁾	2 - on RS-232 port				
North American temperature code	T4A				
Enclosure type rating	None (open-style)				

(1) For Australian Mining certification applications, only a series A controller and a 1756-BA1 battery can be used. For more information, contact your local distributor or sales office.

(2) Use this conductor category information for planning conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Table 8 - Environmental Specifications - ControlLogix 5560 Controllers

Attribute	1756-L61, 1756-L62, 1756-L63, 1756-L64, 1756-L65
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0...60 °C (32...140 °F)
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)
Temperature, surrounding air, max	60 °C (140 °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 IEC 61000-6-4	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
EFT/B immunity IEC 61000-4-4	±4 kV at 5 kHz on RS-232 port
Surge transient immunity IEC 61000-4-5	±2 kV line-earth (CM) on RS-232 port
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz

Table 9 - Certifications - ControlLogix 5560 Controllers

Certification ⁽¹⁾	1756-L61, 1756-L62, 1756-L63, 1756-L64, 1756-L65
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 LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.
CE	European Union 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radio communications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • EN60079-0; General Requirements • II 3 G Ex nA IIC T4 X <p>IMPORTANT: The 1756-L64 and 1756-L65 controllers do not have this certification.</p>
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

1756 ControlLogix-XT Controllers

The ControlLogix-XT™ controllers function in the same way as the traditional ControlLogix controllers. The ControlLogix-XT products include control and communication system components that are conformally coated for extended protection in harsh, corrosive environments:

- When used with FLEX I/O-XT™ products, the ControlLogix-XT system can withstand temperature ranges from -20...70 °C (-4...158 °F).
- When used independently, the ControlLogix-XT system can withstand temperature ranges from -25...70 °C (-13...158 °F).
- Equipment designated as ‘LXT’ is certified for use only within a surrounding air temperature of -25...60 °C (-13...140 °F) even when used with other ‘XT’ equipment.

1756-L73XT ControlLogix Controller Specifications

Table 10 - Technical Specifications - 1756-L73XT ControlLogix 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-SD)
Digital I/O, max	128,000
Analog I/O, max	4000
Total I/O, max	128,000
Replacement battery	—
Energy storage modules	<ul style="list-style-type: none"> • 1756-ESMCAPXT capacitor energy storage module (removable, ships installed with every controller) • 1756-ESMNSEXEXT capacitor energy storage module (removable, no residual WallClockTime power backup) • 1756-ESMNRMXT capacitor energy storage module (nonremovable, secures controller by preventing USB connection and SD card use)
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 Type tested at 500V AC for 60 s
USB port ⁽¹⁾	USB 2.0, full speed (12 Mbps)
Weight, approx	0.25 kg (0.55lb)
Slot width	1
Module location	Chassis-based, any slot
Chassis	1756-A4LXT, 1756-A5XT, 1756-A7LXT, 1756-A7XT
Power supply, standard	1756-PAXT, 1756-PBXT
Power supply, redundant	None
Wire category ⁽²⁾	3 - on USB ports
North American temperature code	T4A
IEC 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 for planning conductor routing. Refer to the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Table 11 - Environmental Specifications - 1756-L73XT ControlLogix Controller

Attribute	1756-L73XT
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) When using a 1756-A7LXT chassis, 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)
Temperature, surrounding air, max	70 °C (158 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	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 CISPR 11 IEC 61000-6-4	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
Conducted RF Immunity IEC 61000-4-6	Not applicable: USB is a temporary programming port.

Table 12 - Certifications - 1756-L73XT ControlLogix 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 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> 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)
C-Tick	Australian Radio communications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-15; Potentially Explosive Atmospheres, Protection 'n' EN 60079-0; General Requirements II 3 G Ex nA IIC T4 X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

1756-L63XT ControlLogix Controller Specifications

Table 13 - Technical Specifications - 1756-L63XT Controller

Attribute	1756-L63XT
User memory	8 MB
I/O memory	478 KB
Optional nonvolatile memory storage	128 MB (1784-CF128)
Digital I/O, max	128,000
Analog I/O, max	4000
Total I/O, max	128,000
Replacement battery	1756-BA2
Current draw @ 5.1V DC	1200 mA
Current draw @ 24V DC	14 mA
Power dissipation	3.5 W
Thermal dissipation	11.9 BTU/hr
Isolation voltage	30V (continuous), basic insulation type, RS-232 port to system Type tested at 720V DC for 60 s
Serial cables	1756-CP3 or 1747-CP3, right angle connector to controller, straight to serial port, 3 m (9.84 ft)
Weight, approx	0.35 kg (0.78 lb)
Slot width	1
Module location	Chassis-based, any slot
Chassis	1756-A4LXT, 1756-A5XT, 1756-A7LXT, 1756-A7XT
Power supply, standard	1756-PBXT, 1756-PAXT
Power supply, redundant	None
Wire category ⁽¹⁾	2 - on RS-232 port
North American temperature code	T4A
IEC temperature code	T4
Enclosure type rating	None (open-style)

(1) Use this conductor category information for planning conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Table 14 - Environmental Specifications - 1756-L63XT Controller

Attribute	1756-L63XT
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) When using a 1756-A7LXT chassis, surrounding air temperature range is -25...60 °C (-13...140 °F) even when using an 'XT' controller
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)
Temperature, surrounding air, max	70 °C (158 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	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
EFT/B immunity IEC 61000-4-4	±4 kV at 5 kHz on RS-232 port
Surge transient immunity IEC 61000-4-5	±2 kV line-earth (CM) on communication ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz

Table 15 - Certifications - 1756-L63XT Controller

Certification ⁽¹⁾	1756-L63XT
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 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> 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)
C-Tick	Australian Radio communications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-15; Potentially Explosive Atmospheres, Protection 'n' EN 60079-0; General Requirements II 3 G Ex nA IIC T4 X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

1756 GuardLogix Controllers



A GuardLogix® controller is a ControlLogix controller that also provides safety control. The GuardLogix system is a dual controller solution—you must use a 1756-L6S/1756-L7S primary controller and a 1756-LSP/1756-L7SP safety partner to achieve up to SIL CL 3/PLe/Cat. 4. A major benefit of this system is that it's still a single project, safety and standard together. The safety partner controller is a part of the system, is automatically configured, and requires no user setup.

During development, safety and standard have the same rules; multiple programmers, online editing, and forcing are all allowed. Once the project is tested and ready for final validation, you set the safety task to a SIL 3 integrity level, which is then enforced by the GuardLogix controller. When safety memory is locked and protected, the safety logic can't be modified and all safety functions operate with SIL 3 CL integrity. On the standard side of the GuardLogix controller, all functions operate like a regular Logix controller. Thus, online editing, forcing, and other activities are all allowed.

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

In addition to the standard features of a ControlLogix controller, the GuardLogix controller has these safety-related features.

Table 16 - Features - GuardLogix Controllers

Feature	1756-L61S, 1756-L62S, 1756-L63S, 1756-L71S, 1756-L72S, 1756-L73S, 1756-L73SXT
Safety communication options	Standard and safety <ul style="list-style-type: none"> • EtherNet/IP • ControlNet • DeviceNet
Network connections, per network module	<ul style="list-style-type: none"> • 100 ControlNet (1756-CN2/A) • 40 ControlNet (1756-CNB/D, 1756-CNB/E) • 128 ControlNet (1756-CN2/B) • 256 EtherNet/IP; 128 TCP (1756-EN2x) • 128 EtherNet/IP; 64 TCP (1756-ENBT)
Controller redundancy	Not supported
Programming languages	Relay ladder with safety application instructions
Primary Controller	Safety Partner
1756-L61S, 1756-L62S, 1756-L63S	1756-LSP
1756-L71S, 1756-L72S, 1756-L73S	1756-L7SP
1756-L73SXT	1756-L7SPXT

1756-L7S GuardLogix Controllers Specifications

Table 17 - Technical Specifications - 1756-L7S GuardLogix Controllers

Attribute	1756-L71S	1756-L72S	1756-L73S	1756-L7SP
User memory	2 MB	4 MB	8 MB	—
Safety memory	1 MB	2 MB	4 MB	(2)
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			—
Replacement battery	—			
Energy storage modules	<ul style="list-style-type: none"> 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, secures controller by preventing USB connection and SD card use) 			<ul style="list-style-type: none"> 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, secures controller by preventing USB connection and SD card use)
Current draw @ 1.2V DC	5 mA			
Current draw @ 5.1V DC	800 mA			
Power dissipation	2.5 W			
Thermal dissipation	8.5 BTU/hr			
Isolation voltage	30V (continuous), basic insulation, USB port to backplane, type tested at 500V AC for 60 s			
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-A7, 1756-A10, 1756-A13, 1756-A17			
Power supply, standard	1756-PA72, 1756-PB72, 1756-PA75, 1756-PB75			
Wire category ⁽¹⁾	3 - on USB ports			
North American temperature code	T4A			
IEC temperature code	T4			
Enclosure type rating	None (open-style)			

(1) Use this Conductor Category information for planning conductor routing. Refer to Industrial Wiring and Grounding Guidelines, publication [1770-4.1](#).

(2) Same as corresponding primary controller.

Table 18 - Environmental Specifications - 1756-L75 GuardLogix Controllers

Attribute	1756-L71S, 1756-L72S, 1756-L73S, 1756-L7SP
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0...60 °C (32...140 °F)
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, surrounding air, 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)	50 g (45 g with SD card installed)
Emissions CISPR 11 IEC 61000-6-4	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
Conducted RF Immunity IEC 61000-4-6	Not applicable: USB is a temporary programming port.

Table 19 - Certifications - 1756-L75 GuardLogix Controllers

Certification ⁽¹⁾	1756-L71S, 1756-L72S, 1756-L73S, 1756-L7SP
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 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> 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) European Union 2006/42/EC MD, compliant with: <ul style="list-style-type: none"> 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
C-Tick	Australian Radio communications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-15; Potentially Explosive Atmospheres, Protection 'n' EN 60079-0; General Requirements II 3 G Ex nA IIC T4 X
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 SIL CL 3 according to IEC 61508, capable of Category 4 according to EN954-1, and capable of PL(e) according to ISO 13849-1 when used as described in the GuardLogix Controller Systems Safety Reference Manual, publication 1756-RM093 .

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

(2) When used with specified firmware revisions.

1756-L6S GuardLogix Controllers Specifications

Table 20 - Technical Specifications - 1756-L6S GuardLogix Controllers

Attribute	1756-L61S	1756-L62S	1756-L63S	1756-LSP
User memory	2 MB	4 MB	8 MB	—
Safety memory	1 MB	1 MB	3.75 MB	Same as corresponding primary controller
I/O memory	478 KB			—
Optional nonvolatile memory storage	128 MB (1784-CF128) ⁽²⁾ 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	1756-BA2 (0.50 g lithium)			
Energy storage modules	—			
Current draw @ 1.2V DC	—			
Current draw @ 5.1V DC	1200 mA			
Current draw @ 24V DC	14 mA			
Power dissipation	3.5 W			
Thermal dissipation	11.9 BTU/hr			
Isolation voltage	30V (continuous), Basic Insulation Type, RS-232 to system Type tested at 720V DC for 60 s			
Serial cables	1756-CP3 or 1747-CP3, right angle connector to controller, straight to serial port, 3 m (9.84 ft)			
Weight, approx	0.32 kg (0.70 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-A7, 1756-A10, 1756-A13, 1756-A17			
Power supply standard	1756-PA72, 1756-PA75, 1756-PB72, 1756-PB75			
Wire category ⁽¹⁾	2 - on RS-232 port			
North American temperature code	T4A			
Enclosure type rating	None (open-style)			

(1) Use this conductor category information for planning conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

(2) RSLogix™ 5000 programming software, version 18 or later.

Table 21 - Environmental Specifications - 1756-L6S GuardLogix Controllers

Attribute	1756-L61S, 1756-L62S, 1756-L63S, 1756-LSP
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0...60 °C (32...140 °F) on 1756-L61S, 1756-L62S, 1756-L63S, 1756-LSP
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)
Temperature, surrounding air, max	60 °C (140 °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 IEC 61000-6-4	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
EFT/B immunity IEC 61000-4-4	±4 kV at 5 kHz on RS-232 port
Surge transient immunity IEC 61000-4-5	±2 kV line-earth (CM) on RS-232 port
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz

Table 22 - Certifications - 1756-L6S GuardLogix Controllers

Certification⁽¹⁾	1756-L61S, 1756-L62S, 1756-L63S, 1756-LSP
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 LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.
CE	European Union 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> • 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) European Union 2006/42/EC MD, compliant with: <ul style="list-style-type: none"> • 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
C-Tick	Australian Radio communications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
FM	FM Approved Equipment for use in Class I, Division 2 Group A, B, C, D Hazardous Locations
KC	Korean Registration of Broadcasting and Communication 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 Controller Systems Safety Reference Manual, publication 1756-RM093 .
UL certified for functional safety ⁽²⁾	Capable of SIL CL 3, see UL File E256621.

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

(2) When used with specified firmware revision.

1756 GuardLogix-XT Controllers

The GuardLogix-XT™ controllers function the same way as the traditional GuardLogix controllers. The GuardLogix-XT controllers are conformally coated for extended protection in harsh, corrosive environments. The GuardLogix-XT 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.

Equipment designated as LXT is certified for use only within a surrounding air temperature of -25...60 °C (-13...140 °F) even when used with other XT equipment.

Attribute	1756-L73SXT	1756-L7SPXT
User memory	8 MB	—
Safety memory	4 MB	Same as corresponding primary controller
I/O memory	0.98 MB	
Digital I/O, max	128,000	
Analog I/O, max	4,000	
Total I/O, max	128,000	
Energy storage modules	<ul style="list-style-type: none"> 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, secures controller by preventing USB connection and SD card use) 	<ul style="list-style-type: none"> 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, secures controller by preventing USB connection and SD card use)
Current draw @ 1.2V DC	5 mA	
Current draw @ 5.1V DC	800 mA	
Power dissipation	2.5 W	
Thermal dissipation	8.5 BTU/hr	
Isolation voltage	30V (continuous), Basic Insulation, USB port to backplane Type tested at 500V AC for 60 s	
Weight, approx	0.25 kg (0.55lb)	
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	1756-A4LXT, 1756-A5XT, 1756-A7LXT, 1756-A7XT	
Power supply	1756-PAXT, 1756-PBXT	
Wire category ⁽¹⁾	3 - on USB ports	
North American temperature code	T4A	
IEC temperature code	T4	
Enclosure type rating	None (open-style)	

(1) Use this conductor category information for planning conductor routing as described in the system level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Table 23 - Environmental Specifications - 1756 GuardLogix-XT Controllers

Attribute	1756-L73SXT, 1756-L7SPXT
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) When using a 1756-A7LXT chassis, surrounding air temperature range is -25...60 °C (-13...140 °F) even when using an XT controller
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)
Temperature, surrounding air, max	70 °C (158 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	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 CISPR 11 IEC 61000-6-4	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
Conducted RF Immunity IEC 61000-4-6.	Not applicable: USB is a temporary programming port.

Table 24 - Certifications - 1756 GuardLogix-XT 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 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> 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) European Union 2006/42/EC MD, compliant with: <ul style="list-style-type: none"> 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
C-Tick	Australian Radio communications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-15; Potentially Explosive Atmospheres, Protection 'n' EN 60079-0; General Requirements II 3 G Ex nA IIC T4 X
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 SIL CL 3 according to IEC 61508, capable of Category 4 according to EN954-1, and capable of PL(e) according to ISO 13849-1 when used as described in the GuardLogix Controller Systems Safety Reference Manual, publication 1756-RM093 .

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

(2) When used with specified firmware revision.

1756 Armor ControlLogix and Armor GuardLogix Controllers



The 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.

Both controllers provide 4 MB of standard memory capacity for the most demanding applications, while the Armor GuardLogix controller provides an additional 2 MB of safety memory. The Armor GuardLogix controller is 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 ControlLogix 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, simplify wiring layouts, and allow for the replacement of devices without having to stop production. The controllers do not require tools or specialty personnel for component replacement. These features can help improve Mean Time to Repair (MTTR), simplify troubleshooting, and make system status readily available without having to open a cabinet or visit a control room.

Table 25 - Features - Armor ControlLogix and Armor GuardLogix Controllers

Feature	1756-L72EROM Series C	1756-L72EROMS Series C
Communication options	Standard on EtherNet/IP networks	Standard and safety on EtherNet/IP networks
Network connections	256 EtherNet/IP; 128 TCP	
Controller redundancy	Not supported	
Programming languages	<ul style="list-style-type: none"> • Relay ladder • Structured text • Function block • SFC 	Relay ladder with safety application instructions

1756-L72EROM Armor ControlLogix and 1756-L72EROMS Armor GuardLogix Controller Specifications

Table 26 - Technical Specifications - 1756-L72EROM Armor ControlLogix and 1756-L72EROMS Armor GuardLogix Controllers

Attribute	1756-L72EROM Series C	1756-L72EROMS Series C
Standard memory	4 MB	4 MB
Safety memory	—	2 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 ⁽³⁾	
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 Type tested at 707V DC for 60 seconds	
Weight, approx	7.04 kg (15.50 lb) for Armor ControlLogix 7.15 kg (15.725 lb) for Armor GuardLogix	
Dimensions	240.0 x 292.0 x 164.52 mm (9.4 x 11.5 x 6.5 in.)	
Ethernet port	4 Ethernet M12 Category 5E	
Ethernet cable	802.3 compliant shielded or unshielded twisted pair	
USB port ⁽¹⁾	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 ⁽²⁾	3 - on USB ports 2 - on power ports 2 - on Ethernet ports	
Enclosure type rating	Type 4/4x Meets IP67 (when marked) with receptacle dust caps or cable termination	

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

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

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

Table 27 - Environmental Specifications - 1756-L72EROM Armor ControlLogix and 1756-L72EROMS Armor GuardLogix Controller

Attribute	1756-L72EROM Series C, 1756-L72EROMS Series C
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0...60 °C (32...140 °F)
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 5kHz and 100kHz on Power Ports ±3 kV at 5 kHz and 100kHz 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

Table 28 - Certifications - 1756-L72EROM Armor ControlLogix and 1756-L72EROMS Armor GuardLogix Controller

Certification ⁽¹⁾	1756-L72EROM Series C	1756-L72EROMS Series C
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.	
CE	European Union 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> 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 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> EN 61000-6-4; Industrial Emissions 	
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: <ul style="list-style-type: none"> 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 Controller Systems Safety Reference Manual, publication 1756-RM099 .

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

(2) When used with specified firmware revisions.

Controller Memory Use

The following equations provide a rough memory estimate.

Controller tasks	_____ x 4000	=	_____ bytes (minimum 1 task)
Digital I/O points	_____ x 400	=	_____ bytes
Analog I/O points	_____ x 2600	=	_____ bytes
DeviceNet modules ⁽¹⁾	_____ x 7400	=	_____ bytes
Other communication modules ⁽²⁾	_____ x 2000	=	_____ bytes
Motion axis	_____ x 8000	=	_____ bytes
FactoryTalk alarm instruction	_____ x 1000	=	_____ bytes (per alarm)
FactoryTalk® subscriber	_____ x 10,000	=	_____ bytes

(1) The first DeviceNet module is 7400 bytes. Additional DeviceNet modules are 5800 bytes each.

(2) Count all the communication modules in the system, not just those in the local chassis. This includes device connection modules, adapter modules, and ports on PanelView™ terminals.

For redundant controller systems, double the memory estimate you calculate. For example, if you estimate you need 2 MB of memory, select a controller with 4 MB of memory.

Reserve 20...30% of the controller memory to accommodate growth.

Controller Compatibility

The following tables provide 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.

Table 29 - Distributed I/O Modules

I/O Modules	EtherNet/IP	ControlNet	DeviceNet	Remote I/O
Chassis-based I/O				
1715 Redundant I/O	Yes	No	No	Yes
1746 SLC™ I/O	No	No	No	Yes
1756 ControlLogix I/O	Yes	Yes	No	No
1769 Compact I/O™	No	No	Yes	Yes ⁽²⁾
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 I/O™ ⁽¹⁾	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) Compatible with ControlLogix 5580 Controllers only.

(2) With a third-party module.

Control Safety I/O Modules

The GuardLogix controller can control these safety 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	No
On-Machine™ I/O			
1732DS ArmorBlock® Guard I/O™	No	No	Yes

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						
Rockwell Automation® 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 Rockwell Automation integrated display rotating media (HDD) and solid state (SSD) computers, Rockwell Automation non-display computers, and Rockwell Automation 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 ⁽⁵⁾
1756 ControlLogix 1756 GuardLogix	Yes	Yes	Yes	Yes	Yes	Yes
1768, 1769 CompactLogix™ 1768 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 ⁽¹⁾ (2)(3)	Yes	Yes	Yes	Yes	Yes	No
1747 SLC™ ⁽⁴⁾⁽⁴⁾	Yes	Yes	Yes	Yes	Yes	Yes
1761 MicroLogix™ ⁽⁴⁾	Yes	No	Yes	No	Yes	Yes
1762 MicroLogix ⁽⁴⁾	Yes	No	Yes	No	Yes	Yes
1763 MicroLogix ⁽⁴⁾	Yes	No	Yes	No	Yes	Yes
1764 MicroLogix ⁽⁴⁾	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 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.

(2) The 1785-ENET Ethernet communication interface module must be series A, firmware revision D or later.

(3) The PLC-5, SLC, and MicroLogix processors appear as I/O points to the Logix controller. Use the appropriate DeviceNet interface for the controller.

(4) Use a 1747-L55x controller with OS501 or later.

(5) The 1756-DH485 module supports full DH-485 functionality.

Communicate with Other Communication Devices

The controller can communicate with these communication devices.

Communication Device	EtherNet/IP	ControlNet	DeviceNet	DH+
Linking device (ControlLogix controllers only)	1788-EN2DN	1788-CN2DN 1788-CN2FF	1788-EN2DN 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-FM1 1203-FB1	—	—
Communication module ⁽²⁾	—	1203-CN 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 module.

(2) Use the generic module configuration to configure the 1203-CN1 module and a CIP generic MSG instruction to communicate with the module.

ControlLogix Redundancy

The ControlLogix 5560 and ControlLogix 5570 controllers support controller redundancy. In a redundant controller system, you need these components:

- Two 1756 chassis, each with the same of the following:
 - Number of slots
 - Compatible modules in the same slots
 - Redundancy firmware revisions in each module
 - Two additional ControlNet nodes outside the redundant chassis pair if the application uses ControlNet networks
- One 1756-RM, 1756-RM2, 1756-RMXT, or 1756-RM2XT redundancy module per chassis that is connected by a 1756-RMC_x cable (the 1756-RM2 redundancy modules cannot be paired with the 1756-RM redundancy modules)
- Up to two ControlLogix 5560 and ControlLogix 5570 controllers, or a combination of the two, in each chassis
- Up to seven enhanced or standard (not mixed) communication modules, that is, 1756-CN2/B, 1756-CN2R/B, 1756-CN2RXT modules 1756-EN2T, 1756-EN2TR, or 1756-EN2TXT modules

Table 30 - Technical Specifications - 1756 Redundancy Modules

Attribute	1756-RM	1756-RM2	1756-RMXT	1756-RM2XT
Current draw @ 1.2V DC	4 mA	—	4 mA	—
Current draw @ 5.1V DC	1.2 A	1.16A	1.2 A	1.16A
Current draw @ 24V DC	120 mA	3.4 mA	120 mA	3.4 mA
Power dissipation	9.0 W	6 W, max	9.0 W	6 W, max
Thermal dissipation	31 BTU/hr	21 BTU/hr	31 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)			
Slot width	1 slot			
Module location	Chassis-based, any slot			
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17		1756-A7XT, 1756-A4LXT, 1756-A5LXT, 1756-A7LXT	
Power supply, standard	1756-PA72, 1756-PA75, 1756-PB72, 1756-PB75		1756-PAXT, 1756-PBXT	
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2		None	
North American temperature code	T4			
IEC temperature code	T4			
Enclosure type	None (open-style)			
Weight, approx	0.29 kg (0.64 lb)			
Mounting	ControlLogix-XT chassis, single-slot module			

Table 31 - Environmental Specifications - 1756 Redundancy Module

Attribute	1756-RM	1756-RM2	1756-RMXT	1756-RM2XT
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0...60 °C (32...140 °F)		-25...70 °C (-13...158 °F) When using a 1756-A7LXT chassis, surrounding air temperature range is -25...60 °C (-13...140 °F) even when using an 'XT' redundancy module.	-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)			
Temperature, surrounding air, max	60 °C (140 °F)		70 °C (158 °F)	
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing			
Vibration IEC 60068-2-6 (Test Fc, Operating)	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			

Table 31 - Environmental Specifications - 1756 Redundancy Module (Continued)

Attribute	1756-RM	1756-RM2	1756-RMXT	1756-RM2XT
Emissions CISPR 11 IEC 61000-6-4	Group 1, Class A	Class A	Group 1, Class A	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			

Table 32 - Certifications - 1756 Redundancy Module

Certification ⁽¹⁾	1756-RM	1756-RMXT	1756-RM2	1756-RM2XT
CSA	CSA Certified Process Control Equipment. See CSA File LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.	—	CSA Certified Process Control Equipment. See CSA File LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.	—
CE	European Union 2004/108/IEC EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) 			
C-Tick	Australian Radio communications Act, compliant with: AS/NZS CISPR 11; 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 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-15; Potentially Explosive Atmospheres, Protection "n" EN 60079-0; General Requirements II 3 G Ex nA IIC T4 X Gc 			
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations	—	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			

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Connections for ControlLogix and GuardLogix 5560 and 5570 Controllers

IMPORTANT When configuring your ControlLogix 5580 control system, you must account for the number of EtherNet/IP nodes you include in the I/O configuration tree in your project, rather than calculating the connections. If you exceed the node limit, the Logix Designer application displays a warning message.

A ControlLogix system uses connections to establish communication links between devices. The types of connections include the following:

- Controller-to-local I/O modules or local communication modules
- Controller-to-remote I/O or remote communication modules
- Controller-to-remote I/O (rack-optimized) modules
- Produced and consumed tags
- Messages
- Access via the controller programming software
- Access via RSLinx® software for HMI or other applications

You indirectly determine the number of connections the controller uses by configuring the controller to communicate with other devices in the system. The limit of connections may ultimately reside in the communication module you use for the connection. If a message path routes through a communication module, the connection related to the message also counts towards the connection limit of that communication module.

The 1756-L6 and 1756-L6S controllers support 250 connections. The 1756-L7 and 1756-L7S controllers support 500 connections. To calculate the total connections for a controller, consider the connections to local I/O modules and the connections to remote modules. Use this table to figure local connections.

Table 33 - Figure Local Connections

Connection Type	Device Quantity	Connections per Device	Total Connections
Local I/O module (always a direct connection)		1	
1756-M16SE, 1756-M08SE, 1756-M03SE SERCOS motion module 1756-M02AE, 1756-M02AS, 1756-HYD02 analog motion module		3	
1756-CN2, 1756-CN2R communication module 1756-CNB, 1756-CNBR communication module 1756-CN2RXT communication module		0	
1756-EN2F, 1756-EN2T communication module 1756-ENBT, 1756-EWEB communication module 1756-EN2TXT communication module		0	
1756-DNB communication module		2	
1756-DHRIO communication module 1756-RIO communication module 1756-DHRIOXT communication module		1	
1756-DH485 communication module		1	
Total			

Regardless of how you configure local I/O modules (rack-optimized or direct connect), the controller establishes a direct connection for each local I/O module. Remote connections depend on the communication module. The number of connections the module supports determines how many connections the controller can access through that module. Use this table to figure remote connections for the controller.

Table 34 - Figure Remote Connections

Connection Type	Device Quantity	Connections per Device	Total Connections
Remote ControlNet communication module			
Configured as a direct connection		0	
Configured as a rack-optimized connection		1	
Remote I/O module over a ControlNet network (direct connection)		1	
Remote Ethernet communication module			
Configured as a direct connection		0	
Configured as a rack-optimized connection		1	
Remote I/O module over an EtherNet/IP network (direct connection)		1	
Remote device over a DeviceNet network (accounted for in rack-optimized connection for local 1756-DNB module)		0	
Other remote communication adapter		1	
Safety input module		1	
Safety output module		2	
Produced tag		1	
Each consumer		1	
Consumed tag		1	
Connected message		1	
Block-transfer message		1	
Total			

ControlLogix Controller Accessories

You can use the following accessories with ControlLogix controllers.

Memory Cards

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

- The ControlLogix 5560 controllers support optional CompactFlash cards purchased separately.
- The ControlLogix 5570 controllers come with the 1784-SD1 Secure Digital (SD) card installed.
- The ControlLogix 5580 controllers come with the 1784-SD2 Secure Digital (SD) card installed.

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.

Table 35 - Technical Specifications - 1784 Memory Cards

Attribute	1784-CF128	1784-SD1	1784-SD2
Memory	128 MB	1 GB	2 GB
Supported controllers	1756-L6, 1756-L6S ⁽¹⁾	1756-L7, 1756-L7S, 1756-L83E, 1756-L85E	
Weight, approx	14.20 g (0.50 oz)	1.76 g (0.06 oz)	

(1) For safety controllers using RSLogix 5000® programming software version 18 or later.

Table 36 - Environmental Specifications - 1784 Memory Cards

Attribute	1784-CF128	1784-SD1, 1784-SD2
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	

Table 37 - Certifications - 1784 Memory Cards

Certification ⁽¹⁾	1784-CF128, 1784-SD1, 1784-SD2
CE	European Union 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> 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)
C-Tick	Australian Radio communications Act, compliant with: AS/NZS CISPR 11; 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 link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

1756 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.

Table 38 - Technical Specifications - 1756 Energy Storage Modules

Attribute	1756-ESMCAP	1756-ESMNSE	1756-ESMNRM
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 deplete its residual energy to 40 μ J 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 μ J or less before you remove the ESM.	Capacitor energy storage module (nonremovable, secures controller by preventing USB connection and SD card use). 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
North American temperature code	T4A		
IEC temperature code	T4		
Enclosure type rating	None (open-style)		

Table 39 - Environmental Specifications - 1756 Energy Storage Modules

Attribute	1756-ESMCAP, 1756-ESMNSE, 1756-ESMNRM
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...85 °C (-40...185 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 10...500 Hz

Table 39 - Environmental Specifications - 1756 Energy Storage Modules (Continued)

Attribute	1756-ESMCAP, 1756-ESMNSE, 1756-ESMNRM
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

Table 40 - Certifications - 1756 Energy Storage Modules

Certification ⁽¹⁾	1756-ESMCAP, 1756-ESMNSE, 1756-ESMNRM
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 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radio communications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	<ul style="list-style-type: none"> European Union 94/9/EC ATEX Directive, compliant with: EN 60079-15; Potentially Explosive Atmospheres, Protection 'n' EN 60079-0; General Requirements II 3 G Ex nA IIC T4 X
KC	Korean Registration of Broadcasting and Communication Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3

(1) See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Extreme Temperature Energy Storage Modules

The 1756-L7 XT and the 1756-L7 SXT extreme temperature controllers are shipped with a 1756-ESMCAPXT installed.

Table 41 - Technical Specifications - 1756 Extreme Temperature Energy Storage Modules

Attribute	1756-ESMCAPXT	1756-ESMNSEXT	1756-ESMNRMXT
Description	Capacitor energy storage module extreme temperature (removable, ships installed with every controller).	Capacitor energy storage module extreme temperature (removable, no residual WallClockTime power backup). Use this ESM if your application requires that the installed ESM deplete its residual energy to 40 μ J 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 μ J or less before you remove the ESM.	Capacitor energy storage module extreme temperature (nonremovable, secures controller by preventing USB connection and SD card use). 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
North American temperature code	T4A		
IEC temperature code	T4		
Enclosure type rating	None (open-style)		

Table 42 - Environmental Specifications - 1756 Extreme Temperature Energy Storage Modules

Attribute	1756-ESMCAPXT	1756-ESMNSEXT	1756-ESMNRMXT
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, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...85 °C (-40...185 °F)		
Temperature, surrounding air, max	70 °C (158 °F)		
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing		
Vibration IEC 60068-2-6 (Test Fc, Operating)	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		

Table 43 - Certifications - 1756 Extreme Temperature Energy Storage Modules

Certification ⁽¹⁾	1756-ESMCAPXT, 1756-ESMNSEXT, 1756-ESMNRMT
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 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radio communications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-15; Potentially Explosive Atmospheres, Protection 'n' EN 60079-0; General Requirements II 3 G Ex nA IIC T4 X
KC	Korean Certification of Broadcasting and Communication Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3

(1) See the Product Certification link at <http://www.ab.com> 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.

Table 44 - Technical Specifications - 1756-L7SP Safety Partner Energy Storage Modules

Attribute	1756-SPESMNSE	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 deplete its residual energy to 40 μ J 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 μ J or less before you remove the ESM.	Capacitor energy storage module for the safety partner (nonremovable, secures controller by preventing USB connection and SD card use). 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	300 mA	330 mA
North American temperature code	T4A	
IEC temperature code	T4	
Enclosure type rating	None (open-style)	

Table 45 - Environmental Specifications - 1756-L7SP Safety Partner Energy Storage Modules

Attribute	1756-SPESMNSE	1756-SPESMNRM
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0...60 °C (32...140 °F)	
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...85 °C (-40...185 °F)	
Temperature, surrounding air, max	60 °C (140 °F)	

Table 45 - Environmental Specifications - 1756-L7SP Safety Partner Energy Storage Modules (Continued)

Attribute	1756-SPESMNSE	1756-SPESMNRM
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	

Table 46 - Certifications - 1756-L7SP Safety Partner Energy Storage Modules

Certification ⁽¹⁾	1756-SPESMNSE, 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 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radio communications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-15; Potentially Explosive Atmospheres, Protection 'n' EN 60079-0; General Requirements II 3 G Ex nA IIC T4 X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

GuardLogix Extreme-temperature Safety Partner Energy-storage Modules

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

Table 47 - Technical Specifications - 1756-L7SPXT Extreme-temperature Safety Partner Energy-storage Modules

Attribute	1756-SPESMNSEXT	1756-SPESMNRMT
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 deplete its residual energy to 40 μ J 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 μ J or less before you remove the ESM.	Capacitor energy-storage module for the safety extreme-temperature partner (nonremovable, secures controller by preventing USB connection and SD card use). If the SD card is installed prior to insertion of the 1756-ESMNRMT 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
North American temperature code	T4A	
IEC temperature code	T4	
Enclosure type rating	None (open-style)	

Table 48 - Environmental Specifications - 1756-L7SPXT Extreme-temperature Safety Partner Energy-storage Modules

Attribute	1756-SPESMNSEXT	1756-SPESMNRMT
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, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...85 °C (-40...185 °F)	
Temperature, surrounding air, max	70 °C (158 °F)	
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing	
Vibration IEC 60068-2-6 (Test Fc, Operating)	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	

Table 49 - 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 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radio communications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-15; Potentially Explosive Atmospheres, Protection 'n' EN 60079-0; General Requirements II 3 G Ex nA IIC T4 X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

1756 ControlLogix Batteries

Each ControlLogix 5560 controller ships with a battery. The ControlLogix 5560 controllers have nonvolatile memory if you install a 1784-CF128 industrial CompactFlash card. With nonvolatile memory, the controller can be used without a battery. If you do not use a battery, current tag data will remain in the state it was when the nonvolatile memory was saved.

These tables summarize battery life, replacement battery compatibility, and recommendations for use of an externally-mounted battery assembly.

Table 50 - Technical Specifications - 1756 ControlLogix Batteries

Attribute	1756-BA1	1756-BA2	1756-BATM ⁽²⁾	1756-BATA
Description	Lithium battery (0.59 g)	Lithium battery (0.59 g)	Externally-mounted battery assembly	Replacement lithium battery for 1756-BATM (5 g max lithium per each D cell; contains 2 D cells)
ControlLogix controllers	1756-L61, 1756-L62, 1756-L63 controllers, series A	1756-L61, 1756-L62, 1756-L63 controllers, series B 1756-L64, 1756-L65 controllers	1756-L61, 1756-L62, 1756-L63 controllers, series A	1756-BATM battery module
GuardLogix controllers	—	1756-L61S, 1756-L62S, 1756-L63S	—	—
Supported legacy controllers	1756-L55M controllers ⁽¹⁾ 1756-L60M03SE controller	—	1756-L55M controllers ⁽²⁾ 1756-L60M03SE controller	1756-BATM battery module

(1) The 1756-L55M22, 1756-L55M23, and 1756-L55M24 controllers have nonvolatile memory and can be used without a battery.

(2) The 1756-BATM externally-mounted battery assembly is recommended for use with all 1756-L55x controllers, and is highly recommended for use with all series A 1756-L6x controllers, and provides longer battery life than the 1756-BA1 battery. The 1756-BATM assembly includes one 1756-BATA lithium battery assembly and a 1 m (3.28 ft) cable to connect housing to the controller.

Serial Communication Cables

The 1756-L6 and 1756-L6S controllers have a built-in serial port.

Table 51 - Technical Specifications - 1756 Serial Cables

Attribute	1756-CP3	1747-CP3
Connector type	Female 9-pin D-shell	
Connector angle	Right angle connector to controller, straight to serial port	
Length	3 m (9.84 ft)	

Notes:

Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

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Publication 1756-TD001J-EN-P - October 2015

Supersedes Publication 1756-TD001I-EN-P - August 2015

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