

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

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 GuardLogix Catalog Number 1756-L72EROMS

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

Topic	Page
1756 ControlLogix Controllers	2
1756 ControlLogix-XT Controllers	8
1756 GuardLogix Controllers	13
1756 GuardLogix-XT Controllers	19
■ 1756 Armor GuardLogix Controller	21
Controller Memory Use	24
Controller Compatibility	25
ControlLogix Redundancy	27
ControlLogix Connections	30
ControlLogix Controller Accessories	31



1756-L6x ControlLogix Controllers Features and Specifications

Table 4 - Features - Standard ControlLogix 1756-L6x Controllers

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 5 - Technical Specifications - 1756-L6x ControlLogix 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 6 - Environmental Specifications - 1756-L6x ControlLogix 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 7 - Certifications - 1756-L6x ControlLogix 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 ControlLogix Batteries

Each ControlLogix controller ships with a battery. The 1756-L6x 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 48 - 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-L55Mx controllers ⁽¹⁾ 1756-L60M03SE controller	—	1756-L55Mx 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-L6x and 1756-L6xS controllers have a built-in serial port.

Table 49 - 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)	