

CompactLogix 5370 Controllers Overview

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The CompactLogix™ 5370 controllers offer state-of-the-art control, communication, and I/O elements in a distributed control package. This product family includes the following CompactLogix 5370 controllers:

- 1769-L16ER-BB1B
- 1769-L18ER-BB1B
- 1769-L18ERM-BB1B
- 1769-L19ER-BB1B
- 1769-L24ER-QB1B
- 1769-L24ER-QBFC1B
- 1769-L27ERM-QBFC1B
- 1769-L30ER
- 1769-L30ERM
- 1769-L30ER-NSE
- 1769-L33ER
- 1769-L33ERM
- 1769-L33ERMO
- 1769-L36ERM
- 1769-L36ERMO
- 1769-L37ERM, 1769-L37ERMK
- 1769-L37ERMO⁽¹⁾
- 1769-L38ERM, 1769-L38ERMK
- 1769-L38ERMO⁽¹⁾

Among the features the CompactLogix 5370 controllers support, are dual EtherNet/IP ports on each controller and support for Integrated Motion over an EtherNet/IP network on some CompactLogix 5370 controllers.

(1) Available at software version 31 and firmware revision 31.

The Armor™ CompactLogix controller, 1769-L33ERMO, 1769-L36ERMO, 1769-L37ERMO, or 1769-L38ERMO, combines the CompactLogix controller with a power supply in an IP67-rated housing for mounting on a machine. For information on how to install the Armor CompactLogix controller, see the Armor CompactLogix Controller Installation Instructions, publication [1769-IN021](#).

For a complete description of the CompactLogix 5370 control system components and functionality, see [Table 1](#) and [Table 2](#), respectively.

CompactLogix 5370 Control System Components

[Table 1](#) describes components a CompactLogix 5370 controller uses in a typical control system.

Table 1 - CompactLogix 5370 Control System Components

System Component	Product Family		
	CompactLogix 5370 L1 Controllers	CompactLogix 5370 L2 Controllers	CompactLogix 5370 L3 Controllers
Controller	One of the controllers that is documented in this publication		
Power supply	External power supply that is connected to the embedded 24V DC nominal input of the controller, nonisolated power supply. The power supply has a 10...28.8 input range.	External power supply that is connected to the embedded 24V DC input of the controller, isolated power supply	One of the following 1769 Compact I/O™ power supplies: <ul style="list-style-type: none"> • 1769-PA2 • 1769-PB2 • 1769-PA4 • 1769-PB4
Communication networks components	Any of the following: <ul style="list-style-type: none"> • EtherNet/IP network via built-in EtherNet/IP network ports • USB connection only for programming and firmware updates 	Any of the following: <ul style="list-style-type: none"> • EtherNet/IP network via built-in EtherNet/IP network ports • DeviceNet network via a 1769-SDN module • USB connection only for programming and firmware updates 	
Software	<ul style="list-style-type: none"> • One of the following: <ul style="list-style-type: none"> – RSLogix™ 5000 software, version 20.xx.xx, - For CompactLogix 5370 controllers that are using firmware revision 20.xxx – Logix Designer application, version 21.00.00 or later, - For CompactLogix 5370 controllers that are using firmware revision 21.000 or later • RSLinx® Classic software, version 2.59.xx or later • RSNetWorx™ for DeviceNet software, version 11.00.00 or later <p>IMPORTANT: This software is not used with CompactLogix 5370 L1 controllers because they do not offer DeviceNet connectivity.</p>		
Secure Digital (SD) card for external nonvolatile memory	<ul style="list-style-type: none"> • 1784-SD1 card - Ships with CompactLogix 5370 controller and offers 1 GB of memory • 1784-SD2 card - Available for separate purchase and offers 2 GB of memory 		
I/O modules	<ul style="list-style-type: none"> • 16 embedded 24V DC digital input points - The nominal input voltage is 24V DC but the operating range is 10...28.8V DC. • 16 embedded 24V DC digital output points - The nominal input voltage is 24V DC but the operating range is 10...28.8V DC. • Local expansion modules- 1734 POINT I/O™ modules • Distributed I/O - Multiple I/O module product lines over an EtherNet/IP network 	<ul style="list-style-type: none"> • 16 embedded 24V DC digital input points • 16 embedded 24V DC digital output points • Only 1769-L24ER-QBFC1B and 1769-L27ERM-QBFC1B controllers <ul style="list-style-type: none"> – Four embedded high-speed counters – Four embedded universal analog input points – Two embedded analog output points • Local expansion modules- 1769 Compact I/O modules • Distributed I/O - Multiple I/O module product lines over DeviceNet and EtherNet/IP networks 	<ul style="list-style-type: none"> • Local expansion modules- 1769 Compact I/O modules • Distributed I/O - Multiple I/O module product lines over DeviceNet and EtherNet/IP networks
Reset button	If held in during controller powerup, it clears the user program from the internal memory of the controller.		

Controller Functionality

[Table 2](#) describes functionality available with CompactLogix 5370 controllers.

Table 2 - CompactLogix 5370 Controller Functionality

Cat. No.	Controller Tasks Supported	Programs Supported Per Task	Internal Energy Storage Solution	EtherNet/IP Network Topology Support	Power Supply Distance Rating	Onboard User Memory Size	Local I/O Module Support
1769-L16ER-BB1B	32	1000	Yes - Eliminating the need for a battery	Support the following topologies: <ul style="list-style-type: none"> • Device Level Ring (DLR) • Linear • Traditional star 	NA	384 KB	As many as six 1734 POINT I/O modules ⁽³⁾
1769-L18ER-BB1B						512 KB	As many as eight 1734 POINT I/O modules ⁽³⁾
1769-L18ERM-BB1B						1 MB	
1769-L19ER-BB1B							
1769-L24ER-QB1B					See footnote ⁽²⁾	768 KB	As many as four Compact I/O modules
1769-L24ER-QBFC1B						1 MB	
1769-L27ERM-QBFC1B					4	1 MB	As many as eight Compact I/O modules
1769-L30ER						2 MB	As many as 16 Compact I/O modules
1769-L30ER-NSE							
1769-L30ERM						3 MB	As many as 30 Compact I/O modules
1769-L33ER							
1769-L33ERM							
1769-L33ERMO							
1769-L36ERM						4MB	
1769-L36ERMO							
1769-L37ERM, 1769-L37ERMK							
1769-L37ERMO ⁽¹⁾							
1769-L38ERM, 1769-L38ERMK					5MB		
1769-L38ERMO ⁽¹⁾							

(1) Available at software version 31 and firmware revision 31.

(2) CompactLogix 5370 L2 controllers have an embedded power supply. Therefore, you do not need to consider power supply distance rating when installing the controller. The Compact I/O modules that are used as local expansion modules in a CompactLogix 5370 L2 control systems operate on a CompactBus. These Compact I/O modules also have a power supply distance rating that you must consider when installing those modules.

For more information on power supply distance rating regarding how to use Compact I/O modules in a CompactLogix 5370 L2 control system, see [page 123](#) and [page 220](#).

(3) **IMPORTANT:** You can use up to the maximum number of 1734 POINT I/O modules with the CompactLogix 5370 L1 controllers that are listed in [Table 3](#). This applies only as long as the total current that the modules draw does not exceed the available POINTBus™ backplane current of 1 A. If you must use more local expansion modules than the POINTBus backplane current supports, you can install a 1734-EP24DC POINT I/O expansion power supply between local expansion modules to increase the POINTBus backplane power and meet your system requirements.