

## Features - CompactLogix 5380 Controllers

Feature	5069-L306ER, 5069-L306ERM	5069-L310ER, 5069-L310ER-NSE, 5069-L310ERM	5069-L320ER, 5069-L320ERM, 5069-L320ERMK	5069-L330ER, 5069-L330ERM, 5069-L330ERMK	5069-L340ER, 5069-L340ERM	5069-L350ERM, 5069-L350ERMK	5069-L380ERM	5069-L3100ERM
Controller tasks • Continuous • Periodic • Event	32 tasks 1000 programs/task All event triggers							
Built-in communication ports	1 - USB port 2 - Ethernet ports <b>IMPORTANT:</b> Consider the following: – When the controller operates in Dual-IP mode, each Ethernet port requires a unique IP address. – When the controller operates in Linear/DLR mode, the controller uses only one IP address.							
USB port communication	USB 2.0, Type B Full speed (12 Mbps) Programming, configuration, firmware update, and on-line edits only							
Ethernet performance	10 Mbps, 100 Mbps, 1 Gbps Full-duplex only							
EtherNet/IP modes supported	Dual-IP mode (Available with the Studio 5000 Logix Designer® application, version 29.00.00 or later) Linear/DLR mode							
EtherNet/IP network topologies supported	DLR Star Linear							
EtherNet/IP nodes supported, max <sup>(1)</sup>	16	24	40	60	90	120	150	180
Socket interfaces supported, max	32							
Integrated motion	As many as two axes (5069-L306ERM controller only)	As many as four axes (5069-L310ERM controller only)	As many as eight axes (5069-L320ERM and 5069-L320ERMK controllers only)	As many as 16 axes (5069-L330ERM and 5069-L330ERMK controllers only)	As many as 20 axes (5069-L340ERM controller only)	As many as 24 axes	As many as 28 axes	As many as 32 axes
Programming languages	Ladder Diagram (LD) Structured Text (ST) Function Block Diagram (FBD) Sequential Function Chart (SFC)							

(1) The maximum number of nodes that are listed represents when the controller is used with the Logix Designer application, version 31 or later. Some controllers can be used with earlier Logix Designer application versions. The maximum number of nodes that a controller supports can be fewer in Logix Designer application, versions 30 or earlier.

**Technical Specifications - CompactLogix 5380 Controllers**

Attribute	5069-L306ER, 5069-L306ERM	5069-L310ER, 5069-L310ER-NSE, 5069-L310ERM	5069-L320ER, 5069-L320ERM, 5069-L320ERMK	5069-L330ER, 5069-L330ERM, 5069-L330ERMK	5069-L340ER, 5069-L340ERM	5069-L350ERM, 5069-L350ERMK	5069-L380ERM	5069-L3100ERM
User memory	0.6 MB	1 MB	2 MB	3 MB	4 MB	5 MB	8 MB	10 MB
Optional nonvolatile memory	1784-SD1 card 1784-SD2 card (shipped with the controller)							
Local I/O modules, max	8	8	16	31 <sup>(5)</sup>	31	31	31	31
MOD Power voltage range	18...32V DC							
MOD Power current, max	450 mA							
MOD Power inrush	850 mA for 125 ms							
MOD Power passthrough <sup>(1)</sup>	9.55 A @ 18...32V DC							
MOD Power current rating, max	10 A Do not exceed 10 A current draw at the MOD Power RTB.							
SA Power voltage ranges <sup>(2)</sup>	0...32V DC 0...240V AC, 47...63 Hz ATEX/IECEX, 125V AC max							
SA Power current, max <sup>(2)</sup>	10 mA (DC power) 25 mA (AC power)							
SA Power passthrough <sup>(2), (3)</sup>	9.95 A @ 0...32V DC 9.975 A @ 0...240V AC, 47...63 Hz ATEX/IECEX, 125V AC max							
SA Power current rating, max <sup>(2)</sup>	10 A (AC or DC power) Do not exceed 10 A current draw at the SA Power RTB.							
Power dissipation, max	8.5 W							
Thermal dissipation, max	29 BTU/hr							
Isolation voltage	300V (continuous), Basic Insulation Type, SA, and MOD Power to Backplane 300V (continuous), Basic Insulation Type, SA to MOD Power 300V (continuous), Basic Insulation Type, Ethernet to Backplane 300V (continuous), Double Insulation Type, Ethernet to MOD Power 300V (continuous), Double Insulation Type, Ethernet to SA Power 50V (continuous), Functional Insulation Type, Ethernet to USB 300V (continuous), Basic Insulation Type, USB to Backplane 300V (continuous), Double Insulation Type, USB to MOD Power 300V (continuous), Double Insulation Type, USB to SA Power No isolation between Ethernet ports Type tested at 1500V AC for 60 s							
Weight, approx	0.768 kg (1.693 lb)							
Dimensions (HxWxD), approx	143.97 x 98.10 x 136.81 mm (5.67 x 3.86 x 5.39 in.)							
Location	DIN rail mount (horizontal mount only)							
DIN rail	Compatible zinc-plated, chromate steel DIN rail. EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.)							

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Removable terminal block	RTBs are available in separately ordered 5069 RTB kits. The MOD power connection uses a 4-point RTB, and the SA power connection uses a 6-point RTB. The following kits are available: <ul style="list-style-type: none"> <li>Kit catalog number 5069-RTB64-SCREW contains RTB catalog numbers 5069-RTB6-SCREW and 5069-RTB4-SCREW.</li> <li>Kit catalog number 5069-RTB64-SPRING contains RTB catalog numbers 5069-RTB6-SPRING and 5069-RTB4-SPRING.</li> </ul>							
Terminal block torque	5069-RTB4-SCREW & 5069-RTB6-SCREW: 0.4 N·m (3.5 lb-in) 5069-RTB4-SPRING & 5069-RTB6-SPRING: Torque does not apply							
Wire size	5069-RTB4-SCREW, 5069-RTB6-SCREW connections: 0.5...1.5 mm <sup>2</sup> (22...16 AWG) solid or stranded copper wire that is rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation, single wire connection only  5069-RTB4-SPRING, 5069-RTB6-SPRING connections: 0.5...1.5 mm <sup>2</sup> (22...16 AWG) solid or stranded copper wire that is rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation, single wire connection only  Ethernet connections: Ethernet Cabling and Installation according to IEC 61918 and IEC 61784-5-2							
Insulation stripping length	5069-RTB4-SCREW, 5069-RTB6-SCREW connections: 12 mm (0.47 in.) 5069-RTB4-SPRING, 5069-RTB6-SPRING connections: 10 mm (0.39 in.)							
Wire category <sup>(4)</sup>	3 - on USB port 1 - on power ports 2 - on Ethernet ports							
Enclosure	None (open-style)							
North American temperature code	T4							
ATEX temperature code	T4							
IECEx temperature code	T4							

(1) Maximum level of MOD Power current that the controller can pass through to the next module in the system. The specific level of current passed through varies based on system configuration.

(2) SA power specifications are based on the number and type of Compact 5000 I/O modules that are used in the system. If the set of I/O modules that are used in the system require AC and DC voltage, you must install a 5069-FPD field potential distributor to separate the module types.

(3) Maximum level of SA Power current that the controller can pass through to the next module in the system. The specific level of current passed through varies based on system configuration.

(4) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

(5) When you use these controllers with the Studio 5000 Logix Designer application, version 29.00.00, the application limits the number of local I/O modules in the project to 16. For more information, see the Rockwell Automation® Knowledgebase article #942580, '5380 CompactLogix controllers limited to 16 local 5069 modules in version 29 of Studio 5000® environment. The document is available at <http://www.rockwellautomation.com/knowledgebase>. With the Logix Designer application, version 30.00.00 or later, the controllers support as many as 31 local I/O modules.

**Environmental Specifications - CompactLogix 5380 Controllers**

<b>Attribute</b>	<b>5069-L306ER, 5069-L306ERM, 5069-L310ER, 5069-L310ER-NSE, 5069-L310ERM, 5069-L320ER, 5069-L320ERM, 5069-L320ERMK, 5069-L330ER, 5069-L330ERM, 5069-L330ERMK, 5069-L340ER, 5069-L340ERM, 5069-L350ERM, 5069-L350ERMK, 5069-L380ERM, 5069-L3100ERM</b>
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 °C < Ta < +60 °C (+32 °F < Ta < +140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
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)	5 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	± 4 kV at 5 kHz on power ports ± 2 kV at 5 kHz on Ethernet ports
Surge transient immunity IEC 61000-4-5	± 1 kV line-line (DM) and ± 2 kV line-earth (CM) on power ports ± 2 kV line-earth (CM) on Ethernet ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz
Voltage variation IEC 61000-4-29	10 ms interruption on MOD Power port

## Certifications - CompactLogix 5380 Controllers

Certification <sup>(1)</sup>	5069-L306ER, 5069-L306ERM, 5069-L310ER, 5069-L310ER-NSE, 5069-L310ERM, 5069-L320ER, 5069-L320ERM, 5069-L320ERMK, 5069-L330ER, 5069-L330ERM, 5069-L330ERMK, 5069-L340ER, 5069-L340ERM, 5069-L350ERM, 5069-L350ERMK, 5069-L380ERM, 5069-L3100ERM
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> <li>EN 61326-1; Meas./Control/Lab., Industrial Requirements</li> <li>EN 61000-6-2; Industrial Immunity</li> <li>EN 61000-6-4; Industrial Emissions</li> <li>EN 61131-2; Programmable Controllers (Clause 8, Zone A &amp; B)</li> </ul> European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> <li>EN 61010-2-201; Control Equipment Safety Requirements</li> </ul> European Union 2011/65/EU RoHS, compliant with: <ul style="list-style-type: none"> <li>EN 50581; Technical documentation</li> </ul>
RCM	Australian Radiocommunications Act, compliant with: <ul style="list-style-type: none"> <li>EN 61000-6-4; Industrial Emissions</li> </ul>
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> <li>EN 60079-0; General Requirements</li> <li>EN 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>II 3 G Ex nA IIC T4 Gc</li> <li>DEMKO 15 ATEX 1455X</li> </ul> when used at or below 125V AC
IECEX	IECEX System, compliant with: <ul style="list-style-type: none"> <li>IEC 600079-0: General Requirements</li> <li>IEC 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>II 3 G Ex nA IIC T4 Gc</li> <li>IECEX UL 15.0007X</li> </ul> when used at or below 125V AC
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: <ul style="list-style-type: none"> <li>Article 58-2 of Radio Waves Act, Clause 3</li> </ul> <b>IMPORTANT:</b> This certification does not apply to the following catalog numbers: 5069-L320ERMK, 5069-L330ERMK, 5069-L350ERMK
EAC	Russian Customs Union TR CU 020/2011 EMC 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.

## Compact GuardLogix 5380 Controllers

Compact GuardLogix™ 5380 controllers are part of the Logix 5000 family of controllers. The controllers provide a scalable controller solution to address a wide variety of applications. The applications range from standalone systems to more complex systems with devices that are connected to the controller via an EtherNet/IP network.

The controllers can function in the same way as CompactLogix 5380 controllers and also provide the functionality to perform safety functions. You can use the controller to achieve up to SIL 2/PLd (Category 3) with the use of the safety task and safety I/O. A major benefit of this system is that it is still one project, safety and standard together.

During development, safety and standard have the same rules; multiple programmers, online editing, and forcing are all allowed. Once the safety system is validated and the safety signature applied, safety memory is protected, the safety logic cannot be modified, and all safety functions operate with a safety integrity of SIL 2.

The controllers are mounted on a DIN rail. They can monitor and control local and remote I/O modules, and other devices connected to an EtherNet/IP network. The controllers support this functionality:

- Use of Compact 5000 I/O standard and safety modules as local I/O and remote I/O modules
- Use Compact 5000 I/O modules, and other I/O modules, as remote I/O modules.
- Support for Integrated Motion over an EtherNet/IP network (not all controllers)
- Use of Dual-IP mode or Linear/DLR mode
- Use of two Ethernet ports that let the controller connect to EtherNet/IP device-level and enterprise-level networks
- Use of 1784-SD1 or 1784-SD2 Secure Digital (SD) card for nonvolatile memory
- USB programming port for temporary connection

Compact GuardLogix 5380 controllers are available with a conformal coating. The conformal coating provides a layer of protection against contaminants and humidity to help protect the assembly and extend product life in harsh, corrosive environments. Products with a conformal coating have a 'K' suffix at the end of the catalog number.

## Features - Compact GuardLogix 5380 Controllers

Feature	5069-L306ERS2, 5069-L306ERMS2	5069-L310ERS2, 5069-L310ERMS2	5069-L320ERS2, 5069-L320ERMS2, 5069-L320ERS2K, 5069-L320ERMS2K	5069-L330ERS2, 5069-L330ERMS2, 5069-L330ERS2K, 5069-L330ERMS2K	5069-L340ERS2, 5069-L340ERMS2	5069-L350ERS2, 5069-L350ERMS2, 5069-L350ERS2K, 5069-L350ERMS2K	5069-L380ERS2, 5069-L380ERMS2	5069-L3100ERS2, 5069-L3100ERMS2
Controller tasks <ul style="list-style-type: none"> <li>Continuous</li> <li>Periodic</li> <li>Event</li> </ul>	31 standard tasks, 1 safety task 1000 programs/task All event triggers							
Built-in communication ports	1 USB port 2 Ethernet ports <b>IMPORTANT:</b> Consider the following: <ul style="list-style-type: none"> <li>When the controller operates in Dual-IP mode, each Ethernet port requires a unique IP address.</li> <li>When the controller operates in Linear/DLR mode, the controller uses only one IP address.</li> </ul>							
USB port communication	USB 2.0, Type B Full speed (12 Mbps) Programming, configuration, firmware update, and on-line edits only							
Ethernet performance	10 Mbps, 100 Mbps, 1 Gbps Full-duplex only							
EtherNet/IP modes supported	Dual-IP mode Linear/DLR mode							
EtherNet/IP network topologies supported	DLR Star Linear							
EtherNet/IP nodes supported, max	16	24	40	60	90	120	150	180
Socket interfaces supported, max	32							
Integrated motion	As many as two axes (5069-L306ERMS2 controller only)	As many as four axes (5069-L310ERMS2 controller only)	As many as eight axes (5069-L320ERMS2, 5069-L320ERMS2K controllers only)	As many as 16 axes (5069-L330ERMS2, 5069-L330ERMS2K controllers only)	As many as 20 axes (5069-L340ERMS2 controller only)	As many as 24 axes (5069-L350ERMS2, 5069-L350ERMS2K controllers only)	As many as 28 axes (5069-L380ERMS2 controller only)	As many as 32 axes (5069-L3100ERMS2 controller only)
Programming languages	Ladder Diagram (LD) Structured Text (ST) Function Block Diagram (FBD) Sequential Function Chart (SFC) Safety Task supports only RLL and the additional safety application instructions							