



CompactLogix 5380, Compact GuardLogix 5380, and CompactLogix 5480 Controllers Specifications

Bulletin 5069

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Summary of Changes

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

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Catalog Numbers

This publication is applicable to the following controllers.

CompactLogix 5380 Controller Catalog Numbers	5069-L306ER, 5069-L306ERM, 5069-L310ER, 5069-L310ERM, 5069-L310ER-NSE, 5069-L320ER, 5069-L320ERM, 5069-L320ERP, 5069-L330ER, 5069-L330ERM, 5069-L340ER, 5069-L340ERM, 5069-L340ERP, 5069-L350ERM, 5069-L380ERM, 5069-L3100ERM
CompactLogix 5380 Conformal Coated Catalog Numbers	5069-L310ERMK, 5069-L320ERMK, 5069-L330ERMK, 5069-L350ERMK
CompactLogix 5380 Process Controller Catalog Numbers	5069-L320ERP, 5069-L340ERP
Compact GuardLogix 5380 SIL 2 Controller Catalog Numbers	5069-L306ERS2, 5069-L306ERMS2, 5069-L310ERS2, 5069-L310ERMS2, 5069-L320ERS2, 5069-L320ERMS2, 5069-L330ERS2, 5069-L330ERMS2, 5069-L340ERS2, 5069-L340ERMS2, 5069-L350ERS2, 5069-L350ERMS2, 5069-L380ERS2, 5069-L380ERMS2, 5069-L3100ERS2, 5069-L3100ERMS2
Compact GuardLogix 5380 SIL 2 Conformal Coated Catalog Numbers	5069-L310ERS2K, 5069-L310ERMS2K, 5069-L320ERS2K, 5069-L320ERMS2K, 5069-L330ERS2K, 5069-L330ERMS2K, 5069-L350ERS2K, 5069-L350ERMS2K
Compact GuardLogix 5380 SIL 3 Controller Catalog Numbers	5069-L306ERMS3, 5069-L310ERMS3, 5069-L320ERMS3, 5069-L330ERMS3, 5069-L340ERMS3, 5069-L350ERMS3, 5069-L380ERMS3, 5069-L3100ERMS3
Compact GuardLogix 5380 SIL 3 Conformal Coated Catalog Numbers	5069-L310ERMS3K, 5069-L320ERMS3K, 5069-L330ERMS3K, 5069-L350ERMS3K
CompactLogix 5480 Controller Catalog Numbers	5069-L430ERMW, 5069-L450ERMW, 5069-4100ERMW, 5069-L4200ERMW

CompactLogix 5380 Controllers

CompactLogix 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 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 CompactLogix 5380 controllers support this functionality:

- Use of Compact 5000™ I/O module 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, 1784-SD2, 1784-SDHC8, 1784-SDHC32, 9509-CMSDCD4 Secure Digital (SD) card for nonvolatile memory.
- USB programming port for temporary connection.
- CompactLogix 5380 Process controllers (5069-L320ERP, 5069-L340ERP) support PlantPax® 5.0, and are conformal coated to add a layer of protection when exposed to harsh, corrosive environments. For more information, see the PlantPax DCS Configuration and Implementation User Manual, publication [PROCES-UM100](#).

Features - CompactLogix 5380 Controllers

Feature	5069-L306ER, 5069-L306ERM	5069-L310ER, 5069-L310ER-NSE, 5069-L310ERM, 5069-L310ERMK	5069-L320ER, 5069-L320ERM, 5069-L320ERMK, 5069-L320ERP	5069-L330ER, 5069-L330ERM, 5069-L330ERMK	5069-L340ER, 5069-L340ERM, 5069-L340ERP	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 IMPORTANT: 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 online edits only							
Ethernet performance	10 Mbps, 100 Mbps, 1 Gbps Full-duplex only							
I/O Capacity (Class 0/1) ⁽¹⁾	<ul style="list-style-type: none"> • 128,000 without CIP Security • 40,000 with integrity • 20,000 with integrity and confidentiality 							
Message Rate Capacity HMI/MSG (Class 3) ⁽¹⁾	<ul style="list-style-type: none"> • 2000 without CIP Security • 1500 with integrity • 900 with integrity and confidentiality 							
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 ⁽²⁾	16	24	40	60	90	120	150	180
Socket interfaces supported, max	32							
Integrated motion ⁽³⁾	5069-L306ERM	5069-L310ERM, 5069-L310ERMK	5069-L320ERM, 5069-L320ERMK, 5069-L320ERP	5069-L330ERM, 5069-L330ERMK	5069-L340ERM, 5069-L340ERP	5069-L350ERM, 5069-L350ERMK	5069-L380ERM	5069-L3100ERM

Features - CompactLogix 5380 Controllers (Continued)

Feature	5069-L306ER, 5069-L306ERM	5069-L310ER, 5069-L310ER-NSE, 5069-L310ERM, 5069-L310ERMK	5069-L320ER, 5069-L320ERM, 5069-L320ERMK, 5069-L320ERP	5069-L330ER, 5069-L330ERM, 5069-L330ERMK	5069-L340ER, 5069-L340ERM, 5069-L340ERP	5069-L350ERM, 5069-L350ERMK	5069-L380ERM	5069-L3100ERM
Number of axes supported, max ⁽⁴⁾	256							
Number of CIP™ Drive axes (Position loop-configured) supported, max ⁽⁵⁾	5069-L306ERM: 2	5069-L310ERM: 4	5069-L320ERM, 5069-L320ERMK, 5069-L320ERP: 8	5069-L330ERM, 5069-L330ERMK: 16	5069-L340ERM, 5069-L340ERP: 20	24	28	32
Programming languages	Ladder Diagram (LD) Structured Text (ST) Function Block Diagram (FBD) Sequential Function Chart (SFC)							

- (1) I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Maximums assume the processor is target, not originator. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP Application Technique, publication [ENET-A1003](#), and the EDS file for a specific catalog number.
- (2) 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.
- (3) Only CompactLogix 5380 controllers that have an M or P in their catalog number support Integrated Motion on EtherNet/IP networks.
- (4) Any combination of CIP Drive, Virtual, Consumed, Regenerative AC/DC Converter and Non-Regenerative AC/DC Converter axis types.
- (5) The maximum number of CIP Drive axes (configured for Position Loop) that can be included in the total integrated motion axes count for a controller.

Technical Specifications - CompactLogix 5380 Controllers

Attribute	5069-L306ER, 5069-L306ERM	5069-L310ER, 5069-L310ER-NSE, 5069-L310ERM, 5069-L310ERMK	5069-L320ER, 5069-L320ERM, 5069-L320ERMK, 5069-L320ERP	5069-L330ER, 5069-L330ERM, 5069-L330ERMK	5069-L340ER, 5069-L340ERM, 5069-L340ERP	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	<ul style="list-style-type: none"> • 1784-SD1 (1 GB) • 1784-SD2 (2 GB), ships with controller • 1784-SDHC8 (8 GB) • 1784-SDHC32 (32 GB) • 9509-CMSDCC4 (4 GB) CodeMeter CmCard card 							
Local I/O modules, max	8	8	16	31 ⁽¹⁾	31	31	31	31
Number of power cycles	80,000							
MOD Power voltage range	18...32V DC							
MOD Power current, max	450 mA							
MOD Power inrush	850 mA for 125 ms							
MOD Power passthrough ⁽²⁾	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 ⁽³⁾	0...32V DC 0...240V AC, 47...63 Hz EX, 125V AC max							
SA Power current, max ⁽³⁾	10 mA (DC power) 25 mA (AC power)							
SA Power passthrough ^{(3),(4)}	9.95 A @ 0...32V DC 9.975 A @ 0...240V AC, 47...63 Hz EX, 125V AC max							
SA Power current rating, max ⁽³⁾	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.)							

Technical Specifications - CompactLogix 5380 Controllers (Continued)

Attribute	5069-L306ER, 5069-L306ERM	5069-L310ER, 5069-L310ER-NSE, 5069-L310ERM, 5069-L310ERMK	5069-L320ER, 5069-L320ERM, 5069-L320ERMK, 5069-L320ERP	5069-L330ER, 5069-L330ERM, 5069-L330ERMK	5069-L340ER, 5069-L340ERM, 5069-L340ERP	5069-L350ERM, 5069-L350ERMK	5069-L380ERM	5069-L3100ERM
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"> Kit catalog number 5069-RTB64-SCREW contains RTB catalog numbers 5069-RTB6-SCREW and 5069-RTB4-SCREW. Kit catalog number 5069-RTB64-SPRING contains RTB catalog numbers 5069-RTB6-SPRING and 5069-RTB4-SPRING. 							
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 ² (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 ² (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 ⁽⁵⁾	3 - on USB port 1 - on power ports 2 - on Ethernet ports							
Enclosure	None (open-style)							
North American temperature code	T4							
UKEX/ATEX temperature code	T4							
IECEX temperature code	T4							

- (1) 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.
- (2) 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.
- (3) 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.
- (4) 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.
- (5) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications - CompactLogix 5380 Controllers

Attribute	5069-L306ER, 5069-L306ERM, 5069-L310ER, 5069-L310ER-NSE, 5069-L310ERM, 5069-L310ERMK, 5069-L320ER, 5069-L320ERM, 5069-L320ERMK, 5069-L320ERP, 5069-L330ER, 5069-L330ERM, 5069-L330ERMK, 5069-L340ER, 5069-L340ERM, 5069-L340ERP, 5069-L350ERM, 5069-L350ERMK, 5069-L380ERM, 5069-L3100ERM
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...6000 MHz
EFT/B immunity IEC 61000-4-4	± 4 kV at 5 kHz on power ports ± 2 kV at 5 kHz on Ethernet ports

Environmental Specifications - CompactLogix 5380 Controllers (Continued)

Attribute	5069-L306ER, 5069-L306ERM, 5069-L310ER, 5069-L310ER-NSE, 5069-L310ERM, 5069-L310ERMK, 5069-L320ER, 5069-L320ERM, 5069-L320ERMK, 5069-L320ERP, 5069-L330ER, 5069-L330ERM, 5069-L330ERMK, 5069-L340ER, 5069-L340ERM, 5069-L340ERP, 5069-L350ERM, 5069-L350ERMK, 5069-L380ERM, 5069-L3100ERM
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 ⁽¹⁾	5069-L306ER, 5069-L306ERM, 5069-L310ER, 5069-L310ER-NSE, 5069-L310ERM, 5069-L310ERMK, 5069-L320ER, 5069-L320ERM, 5069-L320ERMK, 5069-L320ERP, 5069-L330ER, 5069-L330ERM, 5069-L330ERMK, 5069-L340ER, 5069-L340ERM, 5069-L340ERP, 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.
UK and CE	UK Statutory Instrument 2016 No. 1091 and European Union 2014/30/EU 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 61131-2; Programmable Controllers EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) UK Statutory Instrument 2016 No. 1101 and European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> EN 61010-2-201; Control Equipment Safety Requirements UK Statutory Instrument 2012 No. 3032 and European Union 2011/65/EU RoHS, compliant with: <ul style="list-style-type: none"> EN IEC 63000; Technical documentation
RCM	Australian Radiocommunications Act, compliant with: <ul style="list-style-type: none"> EN 61000-6-4; Industrial Emissions
Ex	UK Statutory Instrument 2016 No. 1107 and European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> EN IEC 60079-0; General Requirements EN IEC 60079-7; Explosive Atmospheres, Protection "e" II 3 G Ex ec IIC T4 Gc DEMKO15ATEX1455X and UL22UKEX2307X when used at or below 125 VAC
IECEX	IECEX System, compliant with: <ul style="list-style-type: none"> IEC 600079-0; General Requirements IEC 60079-7; Explosive Atmospheres, Protection "e" II 3 G Ex ec IIC T4 Gc IECEX UL 15.0007X when used at or below 125V AC
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 IMPORTANT: 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 Russian Customs Union TR CU 004/2011 LV Technical Regulation
Morocco	Arrêté ministériel n° 6404-15 du 1er muharram 1437 Arrêté ministériel n° 6404-15 du 29 ramadan 1436
CCC	CNCA-C23-01:2019 强制性产品认证实施规则 防爆电气, 符合 CNCA-C23-01:2019 CCC Implementation Rule Explosion-Proof Electrical Products, compliant with: <ul style="list-style-type: none"> GB 3836.1-2010 爆炸性环境 第1部分: 设备 通用要求 GB 3836.1-2010 Explosive atmospheres – Part 1: Equipment – General requirements GB 3836.8-2014 爆炸性环境 第8部分: 由“n”型保护的设备 GB 3836.8-2014 Explosive atmospheres - Part 8: Equipment protection by type of protection "n"
UKCA	2016 No. 1091 – Electromagnetic Compatibility Regulations 2016 No. 1101 – Electrical Equipment (Safety) Regulations 2016 No. 1107 – Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2012 No. 3032 – Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations
EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications
CIP Security	ODVA conformance tested to CIP Security 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. A major benefit of this system is that it is still one project, safety and standard together.

The [Compact GuardLogix SIL 2 Controllers](#) can achieve up to SIL 2/PLd (Category 3) with the use of the safety task and safety I/O.

The [Compact GuardLogix SIL 3 Controllers](#), based on a 1oo2 design, and can achieve up to SIL 3/PLe (Category 4) with the use of the safety task and safety I/O.

During development, safety and standard have the same rules; multiple programmers, online editing, and forcing are 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 up to SIL 2 for Compact GuardLogix SIL 2 controllers, and up to SIL 3 for Compact GuardLogix SIL 3 controllers.

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, 1784-SD2, 1784-SDHC8, 1784-SDHC32, 9509-CMSDCD4 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.

Compact GuardLogix SIL 2 Controllers

Features - Compact GuardLogix 5380 SIL 2 Controllers

Feature	5069-L306ERS2 5069-L306ERMS2	5069-L310ERS2 5069-L310ERS2K 5069-L310ERMS2 5069-L310ERMS2K	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 • Continuous • Periodic • Event	31 standard tasks, 1 safety task 1000 programs/task All event triggers							
Built-in communication ports	1 USB port 2 Ethernet ports IMPORTANT: 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 online edits only							
Ethernet performance	10 Mbps, 100 Mbps, 1 Gbps Full-duplex only							
I/O Capacity (Class 0/1) ⁽¹⁾	<ul style="list-style-type: none"> 128,000 without CIP Security 40,000 with integrity 20,000 with integrity and confidentiality 							
Message Rate Capacity HMI/MSG (Class 3) ⁽¹⁾	<ul style="list-style-type: none"> 2000 without CIP Security 1500 with integrity 900 with integrity and confidentiality 							
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 ⁽²⁾								
Number of axes supported, max ⁽³⁾	256							
Number of CIP Drive axes (Position loop-configured) supported, max ⁽⁴⁾	5069-L306ERS2: 2	5069-L310ERS2, 5069-L310ERS2K: 4	5069-L320ERS2: 8	5069-L330ERS2, 5069-L330ERS2K: 16	5069-L340ERS2: 20	5069-L350ERS2, 5069-L350ERS2K: 24	5069-L380ERS2: 28	5069-L3100ERS2: 32
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							

(1) I/O numbers are maximums; they assume no HMI/MSG. HMI/MSG numbers are maximums, they assume no I/O. Maximums assume the processor is target, not originator. Packet rates vary depending on packet size. For more details, see Troubleshoot EtherNet/IP Application Technique, publication [ENET-AT003](#), and the EDS file for a specific catalog number.
 (2) Only controllers that have an M in their catalog number support Integrated Motion on EtherNet/IP networks.
 (3) Any combination of CIP Drive, Virtual, Consumed, Regenerative AC/DC Converter and Non-Regenerative AC/DC Converter axis types.
 (4) The maximum number of CIP Drive axes (configured for Position Loop) that can be included in the total integrated motion axes count for a controller.

Technical Specifications - Compact GuardLogix 5380 SIL 2 Controllers

Attribute	5069-L306ERS2 5069-L306ERMS2	5069-L310ERS2 5069-L310ERS2K 5069-L310ERMS2 5069-L310ERMS2K	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
User memory	0.6 MB	1 MB	2 MB	3 MB	4 MB	5 MB	8 MB	10 MB
Safety memory	0.3 MB	0.5 MB	1 MB	1.5 MB	2 MB	2.5 MB	4 MB	5 MB
Optional nonvolatile memory	<ul style="list-style-type: none"> • 1784-SD1 (1 GB) • 1784-SD2 (2 GB), ships with controller • 1784-SDHC8 (8 GB) • 1784-SDHC32 (32 GB) • 9509-CMSDCD4 (4 GB) CodeMeter CmCard card 							
Local I/O modules, max	8	8	16	31	31	31	31	31
Number of power cycles	80,000							
MOD Power voltage range	18...32V DC SELV/PELV ⁽¹⁾							
MOD Power current, max	475 mA							
MOD Power inrush	1200 mA for 125 ms							
MOD Power passthrough voltage range ⁽²⁾	18...32V DC @ 4.525 A							
MOD Power current rating, max	5 A Do not exceed 5 A current draw at the MOD Power RTB.							
SA Power voltage ranges ⁽³⁾	0...32V DC SELV/PELV ⁽¹⁾							
SA Power current, max ⁽³⁾	10 mA (DC power)							
SA Power passthrough voltage ranges ^{(3), (4)}	0...32V DC @ 9.99 A							
SA Power current rating, max ⁽³⁾	10 A (DC power) Do not exceed 10 A current draw at the SA Power RTB.							
Power dissipation, max	9.0 W							
Thermal dissipation, max	30.9 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 seconds							
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.)							
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"> • Kit catalog number 5069-RTB64-SCREW contains RTB catalog numbers 5069-RTB6-SCREW and 5069-RTB4-SCREW • Kit catalog number 5069-RTB64-SPRING contains RTB catalog numbers 5069-RTB6-SPRING and 5069-RTB4-SPRING 							
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 ² (22...16 AWG) solid or stranded copper wire 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 ² (22...16 AWG) solid or stranded copper wire 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.)							

Technical Specifications - Compact GuardLogix 5380 SIL 2 Controllers (Continued)

Attribute	5069-L306ERS2 5069-L306ERMS2	5069-L310ERS2 5069-L310ERS2K 5069-L310ERMS2K	5069-L320ERS2 5069-L320ERMS2 5069-L320ERS2K	5069-L330ERS2 5069-L330ERMS2 5069-L330ERS2K	5069-L340ERS2 5069-L340ERMS2	5069-L350ERS2 5069-L350ERMS2K 5069-L350ERS2K	5069-L380ERS2 5069-L380ERMS2	5069-L3100ERS2 5069-L3100ERMS2
Wire category ⁽⁵⁾	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) For Functional Safety applications, SELV/PELV power supplies are required for both MOD power and SA power.
- (2) 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.
- (3) SA power specifications are based on the number and type of Compact 5000 I/O modules that are used in the system. For example, if the set of I/O modules that are used in a Compact GuardLogix 5380 controller system includes modules that use AC SA power, you must include a 5069-FPD field potential distributor in the system. In a Compact GuardLogix 5380 controller system, modules that use AC SA power must be installed to the right of a 5069-FPD field potential distributor.
- (4) 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.
- (5) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [I770-4.1](#).

Environmental Specifications - Compact GuardLogix 5380 SIL 2 Controllers

Attribute	5069-L306ERS2, 5069-L306ERMS2, 5069-L310ERS2, 5069-L310ERS2K, 5069-L310ERMS2, 5069-L310ERMS2K, 5069-L320ERS2, 5069-L320ERMS2, 5069-L330ERS2, 5069-L330ERMS2, 5069-L340ERS2, 5069-L340ERMS2, 5069-L350ERS2, 5069-L350ERMS2, 5069-L380ERS2, 5069-L380ERMS2, 5069-L3100ERS2, 5069-L3100ERMS2, 5069-L320ERS2K, 5069-L320ERMS2K, 5069-L330ERS2K, 5069-L330ERMS2K, 5069-L350ERS2K, 5069-L350ERMS2K
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) For specific controller details, see Controller Minimum Spacing Requirements on page 20 .
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 3V/m with 1 kHz sine-wave 80% AM from 2700...6000 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