## Features - CompactLogix 5370 Controllers and Compact GuardLogix 5370 Controllers

| Feature | 1769-L16ER-BB1B<br>1769-L18ER-BB1B<br>1769-L18ERM-BB1B, 1769-L18ERM-BB1BK<br>1769-L19ER-BB1B, 1769-L19ER-BB1BK | 1769-L24ER-QB1B<br>1769-L24ER-QBFC1B, 1769-L24ER-QBFC1BK<br>1769-L27ERM-QBFC1B | 1769-L30ER, 1769-L30ERK<br>1769-L30ER-NSE<br>1769-L30ERM, 1769-L30ERMK<br>1769-L33ER, 1769-L33ERK<br>1769-L33ERM, 1769-L33ERMK,<br>1769-L36ERM,<br>1769-L37ERM, 1769-L37ERMK,<br>1769-L38ERM, 1769-L38ERMK | 1769-L30ERMS<br>1769-L33ERMS, 1769-L33ERMSK<br>1769-L36ERMS<br>1769-L37ERMS, 1769-L37ERMSK<br>1769-L38ERMS, 1769-L38ERMSK |
|---|---|---|---|---|
| Controller tasks<br>Continuous<br>Periodic | 32 tasks<br>100 programs/task | | | |
| Built-in communication ports | • Two Ethernet ports - CompactLogix 5370 controllers have two Ethernet ports. The ports carry the same network traffic as part of the embedded switch of the controller. However, the controller uses only one IP address.<br>• One USB port (only for temporary connection). | | | |
| Communication options | EtherNet/IP | • EtherNet/IP<br>• DeviceNet via 1769-SDN scanner | | |
| EtherNet/IP node, max | • 1769-L16ER-BB1B: Up to 4 nodes<br>• 1769-L18ER-BB1B, 1769-L18ERM-BB1B, 1769-L18ERM-BB1BK, 1769-L19ER-BB1B, 1769-L19ER-BB1BK: Up to 8 nodes | • 1769-L24ER-QB1B, 1769-L24ER-QBFC1B, 1769-L24ER-QBFC1BK: Up to 8 nodes<br>• 1769-L27ERM-QBFC1B: Up to 16 nodes | • 1769-L30ER, 1769-L30ER-NSE, 1769-L30ERK, 1769-L30ERM, 769-L30ERMK, 1769-L30ERMS: Up to 16 nodes<br>• 1769-L33ER, 1769-L33ERK, 1769-L33ERM, 1769-L33ERMK, 1769-L33ERMS, 1769-L33ERMSK: Up to 32 nodes<br>• 1769-L36ERM, 1769-L36ERMS: Up to 48 nodes<br>• 1769-L37ERM, 1769-L37ERMK, 1769-L37ERMS, 1769-L37ERMSK: Up to 64 nodes<br>• 1769-L38ERM, 1769-L38ERMK, 1769-L38ERMS, 1769-L38ERMSK: Up to 80 nodes | |
| Controller connections | 256 | | | |
| Embedded I/O modules | • 16 DC digital inputs<br>• 16 DC digital outputs | All controllers:<br>• 16 DC digital inputs<br>• 16 DC digital outputs<br>Only 1769-L24ER-QBFC1B, 1769-L24ER-QBFC1BK, and 1769-L27ERM-QBFC1B:<br>• 4 high-speed counter modules<br>• 4 high-speed counter module outputs<br>• 4 universal analog inputs<br>• 2 analog output points | – | |
| Sockets, max | 32 | | | |
| Integrated Motion over an EtherNet/IP network | 1769-L18ERM-BB1B, 1769-L18ERM-BB1BK: 1 or 2 axes | 1769-L27ERM-QBFC1B - As many as 4 axes | • 1769-L30ERM, 1769-L30ERMK, 1769-L30ERMS: As many as 4 axes<br>• 1769-L33ERM, 1769-L33ERMK, 1769-L33ERMS, 1769-L33ERMSK: As many as 8 axes<br>• 1769-L36ERM, 1769-L36ERMS: As many as 16 axes<br>• 1769-L37ERM, 1769-L37ERMK, 1769-L37ERMS, 1769-L37ERMSK: As many as 16 axes<br>• 1769-L38ERM, 1769-L38ERMK, 1769-L38ERMS, 1769-L38ERMSK: As many as 16 axes | |
| Programming languages | • Relay ladder(1)<br>• Structured Text<br>• Function block<br>• SFC | | | |
| Integrated safety | – | | | Yes |

(1) The Compact GuardLogix 5370 controllers support only the relay ladder programming language in the safety task. The Compact GuardLogix 5370 controllers support all listed programming languages in the standard task.

## Certifications - CompactLogix 5370 Controllers and Compact GuardLogix 5370 Controllers

<table>
<tr><th>Certification[1]</th><th>1769-L16ER-BB1B<br>1769-L18ER-BB1B<br>1769-L18ERM-BB1B, 1769-L18ERM-BB1BK<br>1769-L19ER-BB1B, 1769-L19ER-BB1BK</th><th>1769-L24ER-QB1B<br>1769-L24ER-QBFC1B, 1769-L24ER-QBFC1BK<br>1769-L27ERM-QBFC1B</th><th>1769-L30ER, 1769-L30ERK<br>1769-L30ER-NSE<br>1769-L30ERM, 1769-L30ERMK<br>1769-L33ER, 1769-L33ERK<br>1769-L33ERM, 1769-L33ERMK<br>1769-L36ERM<br>1769-L37ERM, 1769-L37ERMK<br>1769-L38ERM, 1769-L38ERMK</th><th>1769-L30ERMS<br>1769-L33ERMS, 1769-L33ERMSK<br>1769-L36ERMS<br>1769-L37ERMS, 1769-L37ERMSK<br>1769-L38ERMS, 1769-L38ERMSK</th></tr>
<tr><td>c-UL-us</td><td>UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.</td><td>UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E322657.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E334470.</td><td colspan="2">UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.</td></tr>
<tr><td rowspan="2">UKCA and CE</td><td colspan="2" rowspan="2">UK Statutory Instrument 2016 No. 1091 and European Union 2014/30/EU EMC Directive, compliant with:<br>EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>EN 61000-6-4; Industrial Emissions<br>EN 61000-6-2; Industrial Immunity</td><td rowspan="2">UK Statutory Instrument 2016 No. 1091 and European Union 2014/30/EU EMC Directive, compliant with:<br>EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>EN 61000-6-4; Industrial Emissions<br>EN 61000-6-2; Industrial Immunity</td><td>UK Statutory Instrument 2016 No. 1091 and European Union 2014/30/EU EMC Directive, compliant with:<br>EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>EN 61326-3-1; Meas./Control/Lab., Immunity Requirements for safety systems and functions<br>EN 61000-6-4; Industrial Emissions<br>EN 61000-6-2; Industrial Immunity</td></tr>
<tr><td>UK Statutory Instrument 2008 No. 1597 and European Union 2006/42/EC MD Directive, compliant with:<br>EN 61508-1...7; General requirements<br>EN ISO 13849-1; Safety-related parts of control systems<br>EN 62061; Functional safety of safety-related control systems</td></tr>
<tr><td></td><td colspan="4">UK Statutory Instrument 2012 No. 3032 and European Union 2011/65/EU RoHS Directive, compliant with:<br>EN IEC 63000; Technical documentation</td></tr>
<tr><td>RCM</td><td colspan="4">Australian Radiocommunications Act, compliant with:<br>EN 61000-6-4; Industrial Emissions</td></tr>
<tr><td>IECEx</td><td>–</td><td>IECEx System, compliant with:<br>IEC 60079-0; General Requirements<br>IEC 60079-7; Explosive Atmospheres, Protection “e”<br>II 3 G Ex ec IIC T4 Gc<br>IECEx UL 21.0112X</td><td colspan="2">–</td></tr>
<tr><td rowspan="5">Ex</td><td colspan="3">European Union 2014/34/EU ATEX Directive, compliant with:<br>EN 60079-0; General Requirements<br>EN 60079-15; Potentially Explosive Atmospheres, Protection "n"</td><td rowspan="3">-</td></tr>
<tr><td>II 3 G Ex nA IIC T4 Gc<br>ITS 12 ATEX 47611X (until Rev. 3)</td><td>II 3 G Ex nA IIC T4 Gc<br>DEMKO 12 ATEX 1116807X (until Rev. 3)</td><td>II 3 G Ex nA IIC T4 Gc<br>ITS 09 ATEX 46118X (until Rev. 6)</td></tr>
<tr><td colspan="3">Or</td></tr>
<tr><td colspan="4">UK Statutory Instrument 2016 No. 1107 and European Union 2014/34/EU ATEX Directive, compliant with:<br>EN 60079-0; General Requirements<br>EN 60079-7; Potentially Explosive Atmospheres, Protection “e”</td></tr>
<tr><td>II 3 G Ex ec IIC T4 Gc<br>UL 21 ATEX 2603X (from Rev. 1)<br>UL 22 UKEX 2515X (from Rev. 0)</td><td>II 3 G Ex ec IIC T4 Gc<br>DEMKO 12 ATEX 1116807X (from Rev. 4)<br>UL 22 UKEX 2516X (from Rev. 0)</td><td>II 3 G Ex ec IIC T5 Gc<br>UL 21 ATEX 2603X (from Rev. 0)<br>UL 22 UKEX 2515X (from Rev. 0)</td><td>II 3 G Ex ec IIC T5 Gc<br>DEMKO 15 ATEX 1388X<br>UL 22 UKEX 2514X (from Rev. 0)</td></tr>
<tr><td>TÜV</td><td colspan="3">–</td><td>TÜV Certified for Functional Safety<br>Capable of SIL 3</td></tr>
<tr><td>Morocco</td><td colspan="4">Arrêté ministériel n° 6404-15 du 29 ramadan 1436</td></tr>
<tr><td>CCC</td><td colspan="4">CNCA-C23-01:2019 强制性产品认证实施规则 防爆电气<br>CNCA-C23-01:2019 CCC Implementation Rule Explosion-Proof Electrical Products<br>CCC: 2020122309111609, 2021122309113974, 2021312309000565</td></tr>
<tr><td>KC</td><td colspan="4">Korean Registration of Broadcasting and Communications Equipment, compliant with:<br>Article 58-2 of Radio Waves Act, Clause 3</td></tr>
<tr><td>EtherNet/IP</td><td colspan="4">ODVA conformance tested to EtherNet/IP specifications.</td></tr>
</table>

(1) When marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

## Environmental Specifications - CompactLogix 5370 Controllers and Compact GuardLogix 5370 Controllers

| Attribute | 1769-L16ER-BB1B<br>1769-L18ER-BB1B<br>1769-L18ERM-BB1B,<br>1769-L18ERM-BB1BK<br>1769-L19ER-BB1B,<br>1769-L19ER-BB1BK | 1769-L24ER-QB1B<br>1769-L24ER-QBFC1B,<br>1769-L24ER-QBFC1BK<br>1769-L27ERM-QBFC1B | 1769-L30ER, 1769-L30ERK<br>1769-L30ER-NSE<br>1769-L30ERM, 1769-L30ERMK<br>1769-L33ER, 1769-L33ERK<br>1769-L33ERM, 1769-L33ERMK<br>1769-L36ERM,<br>1769-L37ERM, 1769-L37ERMK<br>1769-L38ERM, 1769-L38ERMK | 1769-L30ERMS<br>1769-L33ERMS,<br>1769-L33ERMSK<br>1769-L36ERMS<br>1769-L37ERMS,<br>1769-L37ERMSK<br>1769-L38ERMS,<br>1769-L38ERMSK | 1769-L23-QBFC1B<br>1769-L23E-QB1B<br>1769-L23E-QBFC1B |
|---|---|---|---|---|---|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Na, Operating Thermal Shock) | -20...+60 °C<br>(-4...+140 °F) | 0...60 °C<br>(32...140 °F) | | | |
| Temperature, storage<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C<br>(-40...+185 °F) | | | | |
| Temperature, surrounding air, max | 60 °C (140 °F) | | | | |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat) | 5...95% noncondensing | | | | |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating) | 2 g @ 10...500 Hz(1) | | 5 g @ 10...500 Hz | | |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 30 g(1) | | 20 g - DIN rail<br>30 g - Panel | | |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock) | 50 g(1)(2) | | 30 g - DIN rail<br>40 g - Panel | | |
| Emissions<br>CISPR 11 | IEC 61000-6-4 | | | | |
| ESD immunity<br>IEC 61000-4-2 | 6 kV contact discharges<br>8 kV air discharges | | | | 4 kV contact discharges<br>8 kV air discharges |
| Radiated RF immunity<br>IEC 61000-4-3 | 10V/m with 1 kHz sine wave 80% AM from 80...6000 MHz | | | | 10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz<br>10V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz |
| EFT/B immunity<br>IEC 61000-4-4 | ±3 kV at 5 kHz on power ports<br>±3 kV at 5 kHz on signal ports<br>±3 kV at 5 kHz on communication ports | | ±3 kV at 5 kHz on communication ports | ±3 kV at 5 kHz on communication ports<br>±4 kV at 5 kHz on Protective Earth (PE) | ±2 kV at 5 kHz on power ports<br>±2 kV at 5 kHz on signal ports<br>±2 kV at 5 kHz on communication ports |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports<br>±1 kV line-line (DM) and ±2 kV line-earth (CM) on signal ports<br>±2 kV line-earth (CM) on communication ports | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports<br>±1 kV line-line (DM) and ±2 kV line-earth (CM) on signal ports<br>±2 kV line-earth (CM) on shielded ports<br>±2 kV line-earth (CM) on communication ports | ±2 kV line-earth (CM) on communication ports | | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports<br>±1 kV line-line (DM) and ±2 kV line-earth (CM) on signal ports<br>±2 kV line-earth (CM) on shielded ports<br>±2 kV line-earth (CM) on communication ports |
| Conducted RF immunity<br>IEC 61000-4-6 | 10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz | | | | |

(1) If you are mounting a CompactLogix™ 5370 L1 controller on an EN 50 022 - 35 x 15 mm (1.38 x 0.59 in.) DIN rail, you must first adhere a bumper on the back of the controller. Failure to install the bumper before mounting the controller causes the system to fail to meet this specification. For more information, see the CompactLogix 5370 Controllers User Manual, publication 1769-UM021.

(2) If you are mounting a CompactLogix 5370 L1 controller on an EN 50 022 - 35 x 15 mm (1.38 x 0.59 in.) DIN rail, the Shock, nonoperating specification = 30 g.

## Technical Specifications - CompactLogix 5370 Controllers and Compact GuardLogix 5370 Controllers

| Attribute | 1769-L16ER-BB1B<br>1769-L18ER-BB1B<br>1769-L18ERM-BB1B,1769-L18ERM-BB1BK<br>1769-L19ER-BB1B, 1769-L19ER-BB1BK | 1769-L24ER-QB1B<br>1769-L24ER-QBFC1B,<br>1769-L24ER-QBFC1BK<br>1769-L27ERM-QBFC1B | 1769-L30ER, 1769-L30ERK<br>1769-L30ER-NSE<br>1769-L30ERM, 1769-L30ERMK<br>1769-L33ER, 1769-L33ERK,<br>1769-L33ERM, 1769-L33ERMK<br>1769-L36ERM<br>1769-L37ERM, 1769-L37ERMK<br>1769-L38ERM, 1769-L38ERMK | 1769-L30ERMS<br>1769-L33ERMS, 1769-L33ERMSK<br>1769-L36ERMS<br>1769-L37ERMS, 1769-L37ERMSK<br>1769-L38ERMS, 1769-L38ERMSK |
|---|---|---|---|---|
| User memory | • 1769-L16ER-BB1B: 384 KB<br>• 1769-L18ER-BB1B, 1769-L18ERM-BB1B, 1769-L18ERM-BB1BK: 512 KB<br>• 1769-L19ER-BB1B, 1769-L19ER-BB1BK: 1 MB | • 1769-L24ER-QB1B, 1769-L24ER-QBFC1B, 1769-L24ER-QBFC1BK: 750 KB<br>• 1769-L27ERM-QBFC1B: 1 MB | • 1769-L30ER, 1769-L30ER-NSE, 1769-L30ERK, 1769-L30ERM, 1769-L30ERM: 1 MB<br>• 1769-L33ER, 1769-L33ERK, 1769-L33ERM, 1769-L33ERM: 2 MB<br>• 1769-L36ERM: 3 MB<br>• 1769-L37ERM, 1769-L37ERMK: 4 MB<br>• 1769-L38ERM, 1769-L38ERMK: 5 MB | • 1769-L30ERMS: 1 MB standard + 0.5 MB safety<br>• 1769-L33ERMS, 1769-L33ERMSK: 2 MB standard + 1 MB safety<br>• 1769-L36ERMS: 3 MB standard + 1.5 MB safety<br>• 1769-L37ERMS, 1769-L37ERMSK: 4 MB standard + 1.5 MB safety<br>• 1769-L38ERMS, 1769-L38ERMSK: 5 MB standard + 1.5 MB safety |
| Optional nonvolatile memory | 1784-SD1 card with 1 Gb of available memory (shipped with controller)<br>1784-SD2 card with 2 Gb of available memory (available for separate ordering) | | | |
| Number of local expansion modules, max[1] | • 1769-L16ER-BB1B: 6 - 1734 POINT I/O™ modules<br>• 1769-L18ER-BB1B, 1769-L18ERM-BB1B, 1769-L18ERM-BB1BK, 1769-L19ER-BB1B 1769-L19ER-BB1BK: 8 - 1734 POINT I/O modules | 4 - 1769 Compact I/O™ modules | • 1769-L30ER, 1769-L30ER-NSE, 1769-L30ERK, 1769-L30ERM, 1769-L30ERMK, 1769-L30ERMS: 8 - 1769 Compact I/O modules<br>• 1769-L33ER, 1769-L33ERK, 1769-L33ERM, 1769-L33ERMK, 1769-L33ERMS, 1769-L33ERMSK: 16 - 1769 Compact I/O modules<br>• 1769-L36ERM, 1769-L36ERMS: 30 - 1769 Compact I/O modules<br>• 1769-L37ERM, 1769-L37ERMK, 1769-L37ERMS, 1769-L37ERMSK: 31 - 1769 Compact I/O modules<br>• 1769-L38ERM, 1769-L38ERMK, 1769-L38ERMS, 1769-L38ERMSK: 31 - 1769 Compact I/O modules | |
| Number of I/O module banks, max | – | 1 | 3 | |
| Current draw @ 5V DC, controller power | 1 A | • 1769-L24ER-QB1B: 1.54 A<br>• 1769-L24ER-QBFC1B, 1769-L27ERM-QBFC1B: 1 A<br>Values rated at these ambient temperatures: 40 °C (104 °F), 55 °C (131 °F), 60 °C (140 °F). | 500 mA | 850 mA |
| Current draw @ 24V DC, controller power | – | • 1769-L24ER-QB1B: 0.95 A<br>• 1769-L24ER-QBFC1B, 1769-L27ERM-QBFC1B: 0.8 A<br>Values rated at these ambient temperatures: 40 °C (104 °F), 55 °C (131 °F), 60 °C (140 °F). | 225 mA | 700 mA |
| Current draw @ 24V DC, field power, max | 3 A - Combined total for all devices that draw current from field power connections<br>Input: 5 mA<br>Output: 500 mA | – | | |
| Power dissipation, max | 11.5 W | • 1769-L24ER-QB1B: 12 W<br>• 1769-L24ER-QBFC1B, L27ERM-QBFC1B: 21 W | 4.5 W | 6.5 W |
| Isolation voltage | 50V (continuous), Basic Insulation Type<br>Tested at 500V AC for 60 s, System to Field | 30V (continuous), Basic Insulation Type, USB to system, Ethernet to system and Ethernet to Ethernet<br>Type tested at 500V AC for 60 s | | 50V, Basic Insulation Type<br>Tested at 500V AC for 60 s, System to Communication ports. |
| Short circuit protection, field power | Internal fuse, Non-replaceable | – | | |
| Recommended external short circuit protection, field power | User-provided<br>4...5 A @ 3.15...5.5 $A^2t$ fuse | – | | |
| Weight, approx | 0.66 kg (1.5 lb) | • 1769-L24ER-QB1B: 0.63 kg (1.39 lb)<br>• 1769-L24ER-QBFC1B, 1769-L27ERM-QBFC1B: 0.9 kg (1.9 lb) | 0.31 kg (0.68 lb) | 0.54 kg (1.18 lb) |
| Module width | 100.00 mm (3.94 in.) | • 1769-L24ER-QB1B: 115.00 mm (4.53 in.)<br>• 1769-L24ER-QBFC1B and 1769-L27ERM-QBFC1B: 140 mm (5.51 in.) | 55.00 mm (2.17 in.) | 89.00 mm (3.50 in.) |
| Module location | DIN rail mount | DIN rail or panel mount | | |
| Panel-mount screw torque | — | 1.1...1.8 N•m (10...16 lb•in) - use M4 or #8 screws | | |
| Embedded power supply | 24V DC input, isolated | 24V DC Input, isolated | 1769-PA2, 1769-PB2, 1769-PA4, 1769-PB4 | |

## Technical Specifications - CompactLogix 5370 Controllers and Compact GuardLogix 5370 Controllers (Continued)

| Attribute | 1769-L16ER-BB1B<br>1769-L18ER-BB1B<br>1769-L18ERM-BB1B,1769-L18ERM-BB1BK<br>1769-L19ER-BB1B, 1769-L19ER-BB1BK | 1769-L24ER-QB1B<br>1769-L24ER-QBFC1B,<br>1769-L24ER-QBFC1BK<br>1769-L27ERM-QBFC1B | 1769-L30ER, 1769-L30ERK<br>1769-L30ER-NSE<br>1769-L30ERM, 1769-L30ERMK<br>1769-L33ER, 1769-L33ERK,<br>1769-L33ERM, 1769-L33ERMK<br>1769-L36ERM<br>1769-L37ERM, 1769-L37ERMK<br>1769-L38ERM, 1769-L38ERMK | 1769-L30ERMS<br>1769-L33ERMS, 1769-L33ERMSK<br>1769-L36ERMS<br>1769-L37ERMS, 1769-L37ERMSK<br>1769-L38ERMS, 1769-L38ERMSK |
|---|---|---|---|---|
| Power supply distance rating | – | | • Controller and 1769-SDN: 4<br>• 1769 Compact I/O modules: 4…8, depending on module | 4 (3 I/O modules between controller and power supply) |
| Wire category[2] | 1 - signal ports<br>1 - power ports<br>2 - communication ports | | 2 - communication ports | |
| Wire type, Ethernet | RJ45 connector according to IEC 60603-7, 2 or 4 pair Category 5e minimum cable according to TIA 568 B.1 or Category 5 cable according to ISO/IEC 24702 | | | |
| Wire type, power terminals, and embedded I/O connections | Copper | | – | |
| Wire size, power terminals[3] | 0.051…3.31 $mm^2$ (30…12 AWG)<br>solid or stranded copper wire<br>rated at 90 °C (194 °F), or greater,<br>1.2 mm (3/64 in.) insulation, max<br>Each terminal accepts 1 or 2 wires | 0.25…2.50 $mm^2$ (22…14 AWG)<br>solid copper wire<br>rated at 75 °C (167 °F), or greater<br>1.2 mm (3/64 in.) insulation, max<br>Each terminal accepts only 1 wire | – | |
| Wire stripping length, power terminals[3] | 10 mm (0.39 in) | 8 mm (0.31 in) | – | |
| Screw torque, power terminals [3] | 0.5…0.6 N•m (4.4…5.3 lb•in) | 1.0…1.2 N•m (8.9…10.6 lb•in) | – | |
| Wire size, embedded I/O connections | 0.205…1.31 $mm^2$ (24…16 AWG) solid or stranded copper wire<br>rated at 90 °C (194 °F), or greater<br>1.2 mm (3/64 in.) insulation, max or 90 °C (194 °F)<br>Each terminal accepts only 1 wire | | – | |
| Wire stripping length, embedded I/O connections | 10 mm (0.39 in) | | – | |
| North American temperature code | T4A | T3C | T5 | |
| IECEx temperature code | – | T4 | – | |
| UKEX/ATEX temperature code | T4 | | T5 | |
| Enclosure type rating | None (open-style) | | | |

(1) You can use up to the maximum number of local expansion modules with the CompactLogix 5370 L1 controllers that are listed. This condition applies only if the total current drawn by the embedded I/O and local expansion modules does not exceed both the available POINTBus™ backplane current of 1 A and the field power current of 3 A. For more information on POINTBus backplane current and field-power current considerations when installing local expansion modules, see page 9.

(2) Use this Conductor Category information to plan conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1 and the appropriate system-level installation manual.

(3) In regard to the CompactLogix 5370 L1 controllers, this specification applies to connecting wires to the power connector that is inserted in the controller. In regard to the CompactLogix 5370 L2 controllers, this specification applies to connecting wires to power terminals built into the controller.

## Real-time Clock Accuracy

This table lists the real-time clock accuracy specifications for the CompactLogix 5370 controllers.

| Ambient Temperature | Accuracy |
|---|---|
| 0 °C (32 °F) | -143...+42 s/mo |
| 25 °C (77 °F) | -78...+91 s/mo |
| 40 °C (104 °F) | -101...+73 s/mo |
| 60 °C (140 °F) | -204...-4.50 s/mo |

## Real-time Clock Hold-up Times

This table lists the typical real-time clock hold-up specifications for the CompactLogix 5370 controllers.

**IMPORTANT** The values in this table are typical and can vary with some CompactLogix 5370 control systems.

| Ambient Temperature | Holdup Time, Typical |
|---|---|
| 0 °C (32 °F) | 40 days |
| 25 °C (77 °F) | 35 days |
| 40 °C (104 °F) | 28 days |
| 60 °C (140 °F) | 16 days |

The I/O module support for CompactLogix 5370 controller systems varies by controller.

## I/O Module Support - CompactLogix 5370 L1 Controllers

The CompactLogix 5370 L1 controllers offer an embedded I/O module and the option to use 1734 POINT I/O modules as local expansion modules.

The embedded I/O module provides the following:

- 16 sinking 24V DC digital input points
- 16 sourcing 24V DC digital output points

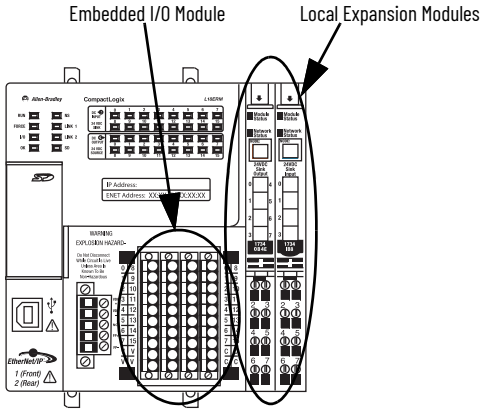
To use 1734 POINT I/O modules as local expansion modules, keep in mind the following:

- Local expansion modules must be installed in the same system as the CompactLogix 5370 L1 controller.
- The modules are installed to the right of the controller.
- The maximum number of local expansion modules available depends on the controller catalog of that system.

This table lists the number of 1734 POINT I/O modules the CompactLogix 5370 L1 controllers support. The minimum RPI of each I/O module is 1.0 ms and can be changed by 0.5 ms increments. You can use the maximum number of 1734 POINT I/O modules with these CompactLogix 5370 L1 controllers. The total current that the embedded I/O and local expansion modules draw can't exceed both the available POINTBus backplane current of 1 A and the field power current of 3 A.

### 1769-L1 Controllers - Local I/O Module Support

| Cat. No. | Local 1734 POINT I/O Modules Supported, Max |
|---|---|
| 1769-L16ER-BB1B | 6 |
| 1769-L18ER-BB1B | 8 |
| 1769-L18ERM-BB1B, 1769-L18ERM-BB1BK | |
| 1769-L19ER-BB1B, 1769-L19ER-BB1BK | |




Depending on the configuration of your application, you can use one of these devices to make additional POINTBus backplane current or field power current available:

| Device | Description |
|---|---|
| 1734-EP24DC | POINT I/O Expansion Power Supply -<br>An expansion power supply is installed between embedded I/O modules and local expansion modules or between local expansion modules.<br>The expansion power supply breaks the available POINTBus backplane current between the modules to its left and right. With the expansion power supply installed, the modules to its left can draw up to 1 A of POINTBus backplane current. The modules to the right of the expansion power supply can draw as much current as the current provided by the expansion power supply.<br>Additionally, the expansion power supply breaks the available field power current between the modules to its left and right. With the expansion power supply installed, the modules to its left can draw up to 3 A of field power current. The modules to the right of the expansion power supply can draw as much field power current as allowed by the expansion power supply.<br>For more information on the 1734-EP24DC expansion power supply, see the POINT I/O 24V DC Expansion Power Supply Installation Instructions, publication 1734-IN058. |
| 1734-FPD | POINT I/O Field Power Distributor Module -<br>A field power distributor module can also be installed between embedded I/O modules and local expansion modules or between local expansion modules.<br>The field power distributor module breaks the available field power current between the modules to its left and right. With the field power distributor module installed, the modules to its left can draw up 3 A of field power current. The modules to the right of the field power distributor can draw as much field power current as allowed by the field power distributor.<br>For more information on the 1734-FPD POINT I/O Field Power Distributor module, see the POINT I/O Field Power Distributor Module Installation Instructions, publication 1734-IN059.<br>**IMPORTANT:** Remember, the field power distributor module changes only the level of field power current available in the system. The module does not affect the level of POINTBus backplane current available. |

# I/O Module Support - CompactLogix 5370 L3 and Compact GuardLogix 5370 Controllers

The CompactLogix 5370 L3 controllers offer local expansion modules that are installed across up to three banks of modules. You must use 1769 Compact I/O modules with these controllers.

Remember the following when using I/O modules with the CompactLogix 5370 L3 and Compact GuardLogix 5370 controllers:

- The controller must be the leftmost module in the local bank of the system.
- The number of I/O modules that are supported in a controller system varies by controller catalog number.

| Cat. No. | Local 1769 Compact I/O Modules Supported, Max |
|---|---|
| 1769-L30ER, 1769-L30ERK<br>1769-L30ER-NSE<br>1769-L30ERM, 1769-L30ERMK<br>1769-L30ERMS | 8 |
| 1769-L33ER, 1769-L33ERK<br>1769-L33ERM, 1769-L33ERMK<br>1769-L33ERM, 1769-L33ERMSK | 16 |
| 1769-L36ERM<br>1769-L36ERMS<br>1769-L37ERM, 1769-L37ERMK<br>1768-L37ERMS, 1768-L37ERMSK<br>1769-L38ERM, 1769-L38ERMK<br>1769-L38ERMS, 1769-L38ERMSK | 30 |

- You can install I/O modules in as many as three banks, that is, the local bank and two additional banks.
- You can install as many as three I/O modules between the controller and power supply.
- You can install as many as eight I/O modules to the right of the power supply in the local bank.
- You can install as many as eight I/O modules on both the left and right sides of the power supply in additional banks.
- You must consider the distance rating and current draw of the controller and all I/O modules when designing your system.
- Systems with multiple banks can be installed vertically or horizontally.
- You must use expansion cables to connect banks in multi-bank systems.
- You must use an end cap at the end of the last bank in a system.