1768 CompactLogix Integrated Motion Specifications

SERCOS Motion Catalog Number 1768-M04SE

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The Logix architecture supports motion control components that work in a wide variety of machine architectures.

- The Kinetix integrated-motion solution uses a SERCOS interface module to perform complex, multi-axis, synchronized motion. With a Kinetix system, you reap the full benefit of the Integrated Architecture platform because the integration does not stop at the controller. This system integrates the drive, the motor, and even the actuator at a lower cost per axis of motion. Use the same RSLogix 5000 programming software to configure, program, and commission your application.
- Logix integrated motion supports the analog family of servo modules for controlling drives/actuators. This solution is separate from the SERCOS interface. The analog family of servo modules provide a ±10 voltage analog output and can interface with a variety of feedback device types including rotary/linear absolute and incremental.
- Networked motion provides the ability to connect via the DeviceNet network to a single axis drive to perform simple, point-to-point indexing. You need Ultraware software for drive and indexing configuration.

For more information, see the:

- Motion Analyzer CD to size your motion application and to make final component selection. Download the software from http://www.ab.com/motion/software/analyzer.html.
- Kinetix Motion Control Selection Guide, publication GMC-SG001, to verify drive, motor, and accessory specifications.

Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls (publication SGI-1.1 available from your local Rockwell Automation sales office or online at http://www.rockwellautomation.com/literature/) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

WARNING	Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product.
ATTENTION	Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence
SHOCK HAZARD	Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.
BURN HAZARD	Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.

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Integrated Motion Interface

The 1768-L4*x* controller supports integrated motion. You can communicate directly to a servo drive by using a motion interface or over a network.

With this controller	You can have
1768-L43	• Four axis • Two feedback axis • Six virtual axis
1768-L45	• Eight axis • Four feedback axis • Six virtual axis

The controller can control servo drives through the 1768-M04SE SERCOS interface.

Some servo drives are supported through communication interface modules. The controller can communicate with these servo drives over these networks.

Drives[1]	EtherNet/IP Network	ControlNet Network	DeviceNet Network	RS-232 Serial Network	DH-485 Network
2098 Ultra3000 DeviceNet servo drive	No	No	Yes	No	No
2098 Ultra5000 intelligent positioning	No	No	Yes	Yes	No

(1) Each drive has different options you order for its supported communication networks. See the appropriate catalog or selection information for a drive to make sure you select the appropriate option when specifying a drive for a specific network.

Environmental Specifications - 1768 Motion Module

Attribute	1768-M04SE
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)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Nonoperating 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

SERCOS Interface Module

The SERCOS interface module can connect to these servo drives:

- 2093 Kinetix 2000 servo drive
- 2094 Kinetix 6000 servo drive
- 2099 Kinetix 7000 high-power servo drive
- 2098 Ultra3000 SERCOS servo drive

Technical Specifications - 1768 SERCOS Interface Module

Attribute	1768-M04SE
Number of modules per controller	1768-L43: 1 module 1768-L45: 2 modules
Number of axes per module	4 axes 2 auxiliary feedback axes
SERCOS data rate	4 Mbps 8 Mbps
SERCOS cycle time @ 4 Mbps	0.5 ms, up to 2 drives(1) 1 ms, up to 4 drives
SERCOS cycle time @ 8 Mbps	0.5 ms, up to 4 drives(1)
Drive control modes	Position or velocity
Current draw @ 5.2V DC	969 mA
Current draw @ 24V DC	0 mA
Power dissipation	5.04 W
Weight, approx.	0.20 kg (7.11 oz)
Dimensions (HxWxD), approx.	132.015 x 56.68 x 105.1 mm (5.2 x 2.23 x 4.14 in.)
Slot width	1
Module location	DIN rail or panel mount
Mounting screw torque	1.16 N•m (10 lb•in) - use M4 or #8 screws
Plastic fiber-optic cables	2090-SCEP*xx*-0 non-jacketed, chlorinated polyethylene 2090-SCVP*xx*-0 standard jacket, polyvinyl chloride 2090-SCNPxx-0 nylon jacket
Glass fiber-optic cables	2090-SCVG*xx*-0 standard jacket, polyvinyl chloride
North American temperature code	T4A
Enclosure type rating	None (open-style)

(1) Kinetix 6000 drives let you use a 0.5 ms cycle time.

Certifications - 1768 SERCOS Interface Module

Certification[1]	1768-M04SE
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 2004/108/IEC EMC Directive, compliant with: • EN 50082-2; Industrial Immunity • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • 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 Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions

(1) When marked. See the Product Certification link at http://www.ab.com for Declarations of Conformity, Certificates, and other certification details.

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At http://www.rockwellautomation.com/support/, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration, and troubleshooting, we offer TechConnect support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit http://www.rockwellautomation.com/support/.

Installation Assistance

If you experience an anomoly within the first 24 hours of installation, review the information that is contained in this manual. You can contact Customer Support for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
Outside United States or Canada	Use the Worldwide Locator at http://www.rockwellautomation.com/support/americas/phone_en.html, or contact your local Rockwell Automation representative.

New Product Satisfaction Return

Rockwell Automation tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

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