1756 ControlLogix Integrated Motion Modules Specifications

SERCOS Motion Catalog Numbers 1756-M03SE, 1756-M08SE, 1756-M16SE, 1756-M08SEG

Analog Motion Catalog Numbers 1756-M02AE, 1756-M02AS, 1756-HYD02

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The controller can control servo drives through these motion interfaces.

Application	Catalog Number
Rockwell Automation SERCOS interface drives	1756-M16SE
	1756-M08SE
	1756-M03SE
SERCOS interface drives that are Extended Pack Profile compliant	1756-M08SEG
Analog servo interface drives with quadrature feedback	1756-M02AE
Analog hydraulic servo interface drives LDT feedback	1756-HYD02
Analog servo interface drives with SSI feedback	1756-M02AS

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

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

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

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.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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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.

SERCOS Interface Modules

The SERCOS interface modules use a single, digital fiber-optic link, which eliminates as many as 18 digital wires per axis. Detailed drive-status information can be sent from drive to controller and from controller to drive.

The SERCOS interface modules can connect to these servo drives:

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

Technical Specifications - 1756 SERCOS Interface Modules

Attribute	1756-M03SE	1756-M08SE	1756-M16SE	1756-M08SEG
Number of drives, max	3	8	16	8 (Extended Pack Profile compliant)
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 2 ms, up to 8 drives			
SERCOS cycle time @ 8 Mbps	0.5 ms, up to 4 drives(1) 1 ms, up to 8 drives 2 ms, up to 16 drives			
Drive control modes	Position, velocity, and torque			Position only
Current draw @ 5.1V DC	760 mA			
Current draw @ 24V DC	2.5 mA			
Power dissipation	5.0 W			
Slot width	1			
Module location	Chassis-based, any slot			
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17			
Power supply, standard	1756-PA72/C, 1756-PA75/B, 1756-PB72/C, 1756-PB75/B, 1756-PC75/B, 1756-PH75/B			
Power supply, redundant	1756-PA75R, 1756-PB75R, 1756-PSCA2			
Plastic fiber-optic cables	2090-SCEP*xx*-0 non-jacketed, chlorinated polyethylene 2090-SCVP*xx*-0 standard jacket, polyvinyl chloride 2090-SCNP*xx*-0 nylon jacket			
Glass fiber-optic cables	2090-SCVG*xx*-0 standard jacket, polyvinyl chloride			
Enclosure type rating	None (open-style)			

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

Environmental Specifications - 1756 SERCOS Interface Modules

Attribute	1756-M03SE, 1756-M08SE, 1756-M16SE, 1756-M08SEG
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

Environmental Specifications - 1756 SERCOS Interface Modules

Attribute	1756-M03SE, 1756-M08SE, 1756-M16SE, 1756-M08SEG
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 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	CISPR 11: Group 1, Class A
ESD immunity IEC 61000-4-2	4 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

Certifications - 1756 SERCOS Interface Modules

Certification[1]	1756-M03SE, 1756-M08SE, 1756-M16SE, 1756-M08SEG
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 61326-1; Meas./Control/Lab., Industrial Requirements • 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.