MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

ALLEN-BRADLEY

1756-M16SE/A

16-AXIS SERCOS INTERFACE MOTION MODULE

Used with the applicable ControlLogix Integrated Motion configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Rockwell Automation technical documentation for 1756-M16SE/A

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

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.