

Compact and Powerful Servo Controllers

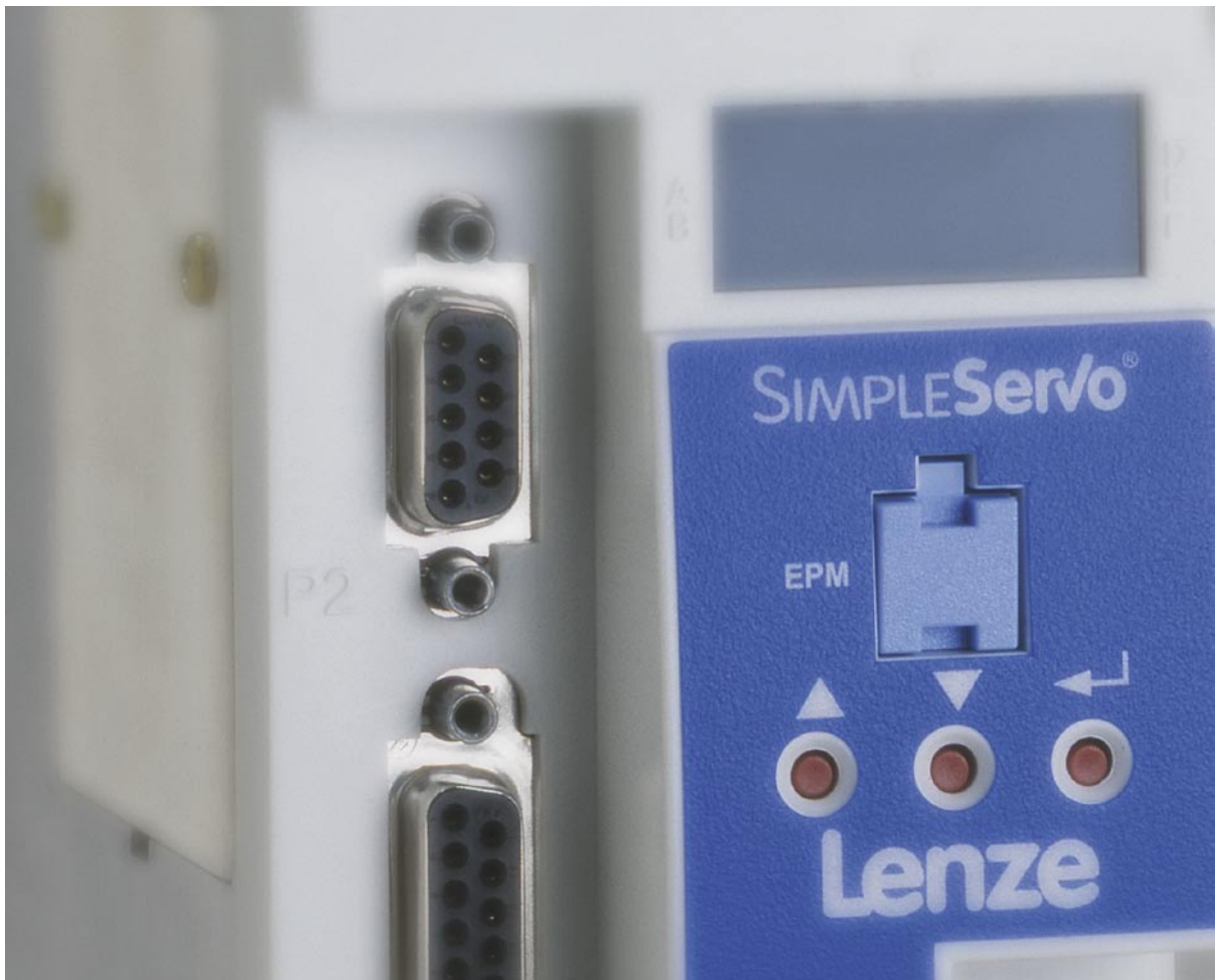


9/04: Available NOW!

**Model 94 -
SimpleServo**

**Model 940 -
PositionServo**

Available February 2005



Lenze

Model 94 - SimpleServo Specifications

Model 94 SimpleServo: Velocity, torque and electronic gearing applications are simple with performance you would expect only from a more complicated, high-cost servo system.

Modes of Operation:

Torque:

Reference: 0 to ± 10 VDC 16-bit; scalable
 Torque Range: 100:1
 Bandwidth: Up to 3 kHz (16-bit feedback resolution)

Velocity:

Reference: 0 to ± 10 VDC or 0 to 10VDC, scalable
 Regulation: ± 1 RPM
 Bandwidth: up to 400 Hz
 Speed Range: 5000:1 with 5000 ppr encoder position

Position: (electronic gearing)

Reference: 0 to 2 MHz PWM input, scalable
 Min. Pulse Width: 250 nanoseconds
 Loop Bandwidth: Up to 400 Hz

Serial Communications:

Standard:

RS232 @ 38.4 KBPS

Optional:

RS485 @ 38.4 KBPS (addressable to 32 devices)
 CANopen 250 KBPS

Windows Software:

Windows 95, 98, NT and XP

Details of I/O:

All I/O is optically isolated

2 Digital Inputs (5-24V, sinking)

1 dedicated to ENABLE, 1 programmable

2 Digital Outputs (5-24V @ 20mA, sink or source)

Programmable isolated open-collector

1 Analog Input (16-bit)

0 to ± 10 V differential

1 Analog Output (12-bit)

0 to ± 10 V single-ended

Input Voltage:

AC: 100-240VAC $\pm 10\%$, 50/60Hz, single phase, or
 200-240VAC $\pm 10\%$, 50/60Hz, three phase
 400-480VDC $\pm 10\%$, 50/60Hz, three phase

Output Voltage:

AC: sinusoidal three phase
 0-115VAC RMS, 0-230VAC RMS, 0-460VAC RMS

Environment:

Storage Temperature: -10 to 70°C

Operating Temperature: 0 to 40°C

Temperature Drift: 0.1% per °C rise

Humidity: 5-90% non-condensing

Altitude: 1500m

derate current 1% per 300m above 1500m

Vibration: 10 - 2000Hz @ 2g



Models & Ratings:

Input Volts	Model 94	Output Current [Amps]		Width* [mm]
		Rated	Max	
120 - 240 V 1~	E94SS040X2Y	4	12	69
	E94SS080X2Y	8	24	95
	E94SS100X2Y	10	30	115
200 - 240 V 3~	E94SS040X2Y	4	12	69
	E94SS080X2Y	8	24	95
	E94SS100X2Y	12	36	115
400 - 480 V 3~	E94SS020X4T	2	6	69
	E94SS040X4T	4	12	95
	E94SS060X4T	6	18	115

* Controller Dimensions: Height = 190mm, Depth = 190mm

Powerful Innovation

The Electronic Programmable Module (EPM) is a plug-in memory chip designed specifically for the Model 94 (blue) and the Model 940 (white). With the EPM, servo controller parameters need only be configured once and can then be transferred to other 94 or 940 model controllers, independent of rating! Modifying controller parameters or the entire configuration will take just seconds - simply replace the EPM on the front panel of the controller.

Programming the drive on-line with the MotionView software (that ships with the product) stores the program in the EPM mounted in the controller. Or, use MotionView off-line and store the program file into the battery-powered EPM Programmer, the programmer can save multiple servo configurations. The EPM Programmer facilitates copying controller configurations or programs from EPM to EPM, file to EPM or EPM to file in only two seconds at the touch of a button.

EPM Benefits:

- Program without power on the controller
- Re-use the controller memory
- Quick job changes without reprogramming
- Eliminate reprogramming errors
- OEM machine defaults



Model 940 - PositionServo Specifications

Model 940 PositionServo: The Model 940 adds programming capability plus more I/O than the Model 94. Program precise motion profiles or multi-axis coordination using SimpleMotion language, a BASIC-like set of commands.

Modes of Operation:

SimpleMotion® Language Features

Language: Statements-based
Operands: "Typeless" unified, 64-bit
Execution: Compiled Java-like byte code
Semantic: BASIC-like
Translation: Multipass compiler
Arithmetic precision: 64-bit

Programming Tools:

Full-featured IDE (integrated into MotionView® software)

- Single-step execution capability
- Breakpoints
- Status and variable WATCH
- On-the-fly Debug Window
- "Real-time" Oscilloscope

Program Execution:

- 5 separate threads
- Program body
 - Motion control
 - EVENTS
 - Fault monitor
 - Communication

Scan rate:

- 255µS Trappable EVENT (deterministic)
- ~2µS reaction to registration mark
- ~1µS per step/instruction (depending on program length)

User Program Memory:

- 64KB for user compiled program
- EPM removable, non-volatile memory module
- Nonvolatile Program Variables

Motion:

- 64-bit indexing (incremental, absolute, registered, segmented)
- 32-level motion queue
- Linear and S-curve accel and decel

Index Profiles:

Trapezoidal, Multi-segment, S-curve,
Multi-segment with S-curve

Motion Specific Commands

- Move (Relative and Absolute)
- Multi-segment profile, back-to-back (stitchable) execution
- Events assignment and handling
- Registration
- I/O handling
- Filter parameters setup
- Gearing
- Operating mode (Velocity or Position)

Non-motion Specific Operators

- Assignment operators
- Conditional branching
- Logic and arithmetic operators
- Bit-wise operators
- Looping (repeat)
- Program flow control
- Subroutines
- Phase Current
- Network Broadcasting

Serial Communications:

Standard:

RS232 @ 115/38.4 KBPS

Optional:

- RS485 @ 115/38.4 KBPS (addressable to 32 devices)
- CANopen 250/500 KBPS
- Ethernet @ 10/100 MBPS

Windows Software:

Windows 95, 98, NT and XP

Details of I/O:

All I/O is optically isolated

12 Programmable Digital Inputs (5-24V, sinking)

- 2 high-speed (2µs) programmable
- Master encoder & registration

5 Digital Outputs (5-24V @ 20mA, sink or source)

- 1 Dedicated READY, 4 Programmable isolated open-collector

1 Analog Input (16-bit)

- 0 to ±10V differential

1 Analog Output (12-bit)

- 0 to ±10V single-ended

Input Voltage:

- AC:** 100-240VAC ± 10%, 50/60Hz, single phase, or
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 400-480VDC ± 10%, 50/60Hz, three phase

Output Voltage:

- AC:** sinusoidal three phase
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- Storage Temperature:** -10 to 70°C
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Altitude: 1500m
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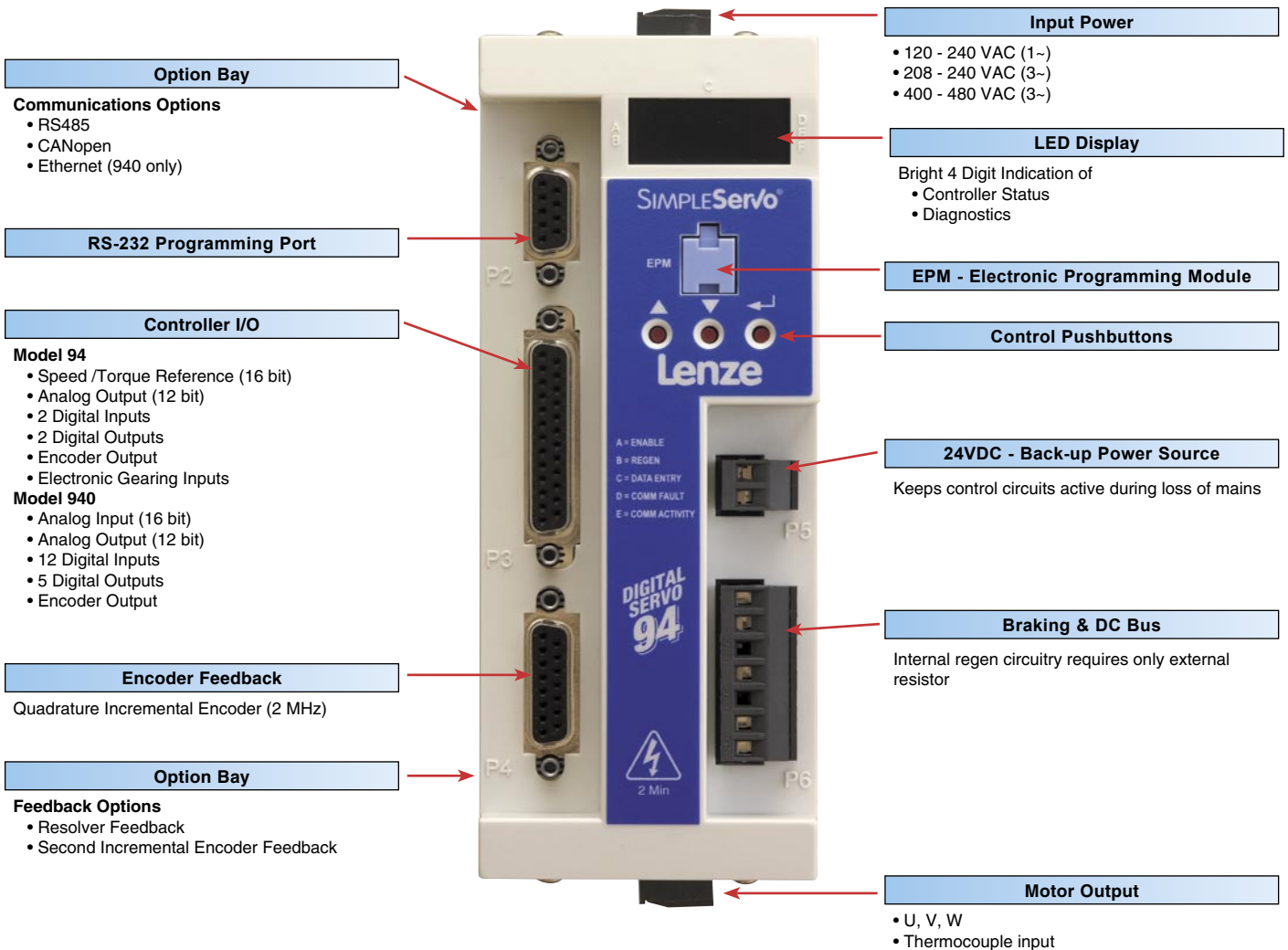
Models & Ratings:

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		Rated	Max	
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	E940PS080X2Y	8	24	95
	E940PS100X2Y	10	30	115
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Models 94 and 940 Connections



Algeria
 Argentina
 Australia
 Austria
 Belgium
 Bosnia-Herzegovina
 Brazil
 Bulgaria
 Canada
 Chile
 China
 Croatia
 Czech Republic
 Denmark
 Egypt
 Estonia
 Finland
 France
 Germany

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 Syria
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 Thailand
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 Turkey
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