SureServo series drives and motors part numbering system

Component Option
- 0: Drive
- Blank: Motor without brake
- B: Motor with brake

Rated Output Power
- 01: 100W
- 02: 200W
- 04: 400W
- 07: 750W
- 10: 1000W
- 20: 2000W
- 30: 3000W

Nominal Input Voltage
- 2: 230VAC; 50/60 Hz

Here is what you will need to order a complete servo system:

1. Servo Drive
2. Servo Motor
3. Motor Power Cable
4. Motor Encoder Cable
5. ZIPLink I/O Interface

SureServo AC servo drive, motor, and cable combinations

<table>
<thead>
<tr>
<th>Inertia &amp; Power</th>
<th>Drive and Motor</th>
<th>Power Cables (from Drive to Motor)</th>
<th>Encoder Feedback Cables</th>
<th>Miscellaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low inertia</td>
<td>Servo Drive</td>
<td>10 ft 20 ft 30 ft 60 ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100W</td>
<td>SVL-201</td>
<td>SVC-PFL-010 SVC-PFL-020 SVC-PFL-030 SVC-PFL-060</td>
<td>SVC-EFL-010 SVC-EFL-020 SVC-EFL-030 SVC-EFL-060</td>
<td>ZL-RTB50 and ZL-SVC-CBL50 or ZL-SVC-CBL50-1 or ZL-SVC-CBL50-2</td>
</tr>
<tr>
<td>400W</td>
<td>SVL-204</td>
<td>SVC-PFL-010 SVC-PFL-020 SVC-PFL-030 SVC-PFL-060</td>
<td>SVC-EFL-010 SVC-EFL-020 SVC-EFL-030 SVC-EFL-060</td>
<td>SVC-MDCOM-CBL</td>
</tr>
<tr>
<td>5000W</td>
<td>SVL-238</td>
<td>SVC-PFL-010 SVC-PFL-020 SVC-PFL-030 SVC-PFL-060</td>
<td>SVC-EFL-010 SVC-EFL-020 SVC-EFL-030 SVC-EFL-060</td>
<td>SVC-MDCOM-CBL</td>
</tr>
<tr>
<td>6000W</td>
<td>SVL-244</td>
<td>SVC-PFL-010 SVC-PFL-020 SVC-PFL-030 SVC-PFL-060</td>
<td>SVC-EFL-010 SVC-EFL-020 SVC-EFL-030 SVC-EFL-060</td>
<td>SVC-MDCOM-CBL</td>
</tr>
</tbody>
</table>

For the latest prices, please check AutomationDirect.com.
AC Servo System Configuration

100W Low Inertia System

<table>
<thead>
<tr>
<th>Torque (N·m)</th>
<th>Speed (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.1</td>
<td>1000</td>
</tr>
<tr>
<td>0.2</td>
<td>2000</td>
</tr>
<tr>
<td>0.3</td>
<td>3000</td>
</tr>
<tr>
<td>0.4</td>
<td>4000</td>
</tr>
<tr>
<td>0.5</td>
<td>5000</td>
</tr>
</tbody>
</table>

Intermittent Duty Zone

Continuous Duty Zone

J_m = Motor Inertia = 0.000027 lb-in-s² (0.00003 kg-m²)

---

200W Low Inertia System

<table>
<thead>
<tr>
<th>Torque (N·m)</th>
<th>Speed (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.1</td>
<td>1000</td>
</tr>
<tr>
<td>0.2</td>
<td>2000</td>
</tr>
<tr>
<td>0.3</td>
<td>3000</td>
</tr>
<tr>
<td>0.4</td>
<td>4000</td>
</tr>
<tr>
<td>0.5</td>
<td>5000</td>
</tr>
</tbody>
</table>

Intermittent Duty Zone

Continuous Duty Zone

J_m = Motor Inertia = 0.00016 lb-in-s² (0.00018 kg-m²)

---

400W Low Inertia System

<table>
<thead>
<tr>
<th>Torque (N·m)</th>
<th>Speed (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.1</td>
<td>1000</td>
</tr>
<tr>
<td>0.2</td>
<td>2000</td>
</tr>
<tr>
<td>0.3</td>
<td>3000</td>
</tr>
<tr>
<td>0.4</td>
<td>4000</td>
</tr>
<tr>
<td>0.5</td>
<td>5000</td>
</tr>
</tbody>
</table>

Intermittent Duty Zone

Continuous Duty Zone

J_m = Motor Inertia = 0.0003 lb-in-s² (0.00034 kg-m²)

---

For all systems:
Order programming software & programming cable if needed. See pgs. tMNC-144 & 45.

---

For the latest prices, please check AutomationDirect.com.
**AC Servo System Configuration**

### 750W Low Inertia System

<table>
<thead>
<tr>
<th>Torque (N-m)</th>
<th>Speed (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td>5000</td>
</tr>
<tr>
<td>8.0</td>
<td>3000</td>
</tr>
<tr>
<td>6.0</td>
<td>2000</td>
</tr>
<tr>
<td>4.0</td>
<td>1500</td>
</tr>
<tr>
<td>2.0</td>
<td>1000</td>
</tr>
</tbody>
</table>

**J_m = Motor Inertia = 0.0096 lb-in-s^2 (0.000108 kg - m^2)**

### 1 kW Low Inertia System

<table>
<thead>
<tr>
<th>Torque (N-m)</th>
<th>Speed (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td>5000</td>
</tr>
<tr>
<td>8.0</td>
<td>4000</td>
</tr>
<tr>
<td>6.0</td>
<td>3000</td>
</tr>
<tr>
<td>4.0</td>
<td>2000</td>
</tr>
<tr>
<td>2.0</td>
<td>1000</td>
</tr>
</tbody>
</table>

**J_m = Motor Inertia = 0.023 lb-in-s^2 (0.00026 kg - m^2)**

### 1 kW Medium Inertia System

<table>
<thead>
<tr>
<th>Torque (N-m)</th>
<th>Speed (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.0</td>
<td>5000</td>
</tr>
<tr>
<td>22.1</td>
<td>3000</td>
</tr>
<tr>
<td>17.1</td>
<td>2000</td>
</tr>
<tr>
<td>13.2</td>
<td>1500</td>
</tr>
<tr>
<td>5.0</td>
<td>1000</td>
</tr>
</tbody>
</table>

**J_m = Motor Inertia = 0.053 lb-in-s^2 (0.000598 kg - m^2)**

---

For all systems:
- Order programming software & programming cable if needed.
- See pgs. tMNC-145 & 45.

1. SureServo Motor
2. Motor Encoder Cable (1)
3. Motor Power Cable (1)
4. ZIPLink I/O Interface
5. ZL-RTB50 $51.00 and one cable below:
   - ZL-SVC-CBL50 (0.5m) $33.00
   - ZL-SVC-CBL50-1 (1m) $34.00
   - ZL-SVC-CBL50-2 (2m) $39.50

**For the latest prices, please check AutomationDirect.com.**

---

For all systems:
- Order programming software & programming cable if needed.
- See pgs. tMNC-145 & 45.

1. SureServo Motor
2. Motor Encoder Cable (1)
3. Motor Power Cable (1)
4. ZIPLink I/O Interface
5. ZL-RTB50 $51.00 and one cable below:
   - ZL-SVC-CBL50 (0.5m) $33.00
   - ZL-SVC-CBL50-1 (1m) $34.00
   - ZL-SVC-CBL50-2 (2m) $39.50

**For the latest prices, please check AutomationDirect.com.**
AC Servo System Configuration

For all systems:
Order programming software & programming cable if needed.
See pgs. 44 & 45.

2 kW Medium Inertia System

<table>
<thead>
<tr>
<th>Torque (N-m)</th>
<th>Speed (rpm)</th>
<th>Servo Drive</th>
<th>Product</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 25</td>
<td>0 - 5000</td>
<td>SVA-2300</td>
<td>SVC-220</td>
<td>$879.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SVM-220B (w/brake)</td>
<td>$1,202.00</td>
</tr>
</tbody>
</table>

J_m = Motor Inertia = .014 lb-in-s^2 = (0.00158 kg - m^2)

3 kW Medium Inertia System

<table>
<thead>
<tr>
<th>Torque (N-m)</th>
<th>Speed (rpm)</th>
<th>Servo Drive</th>
<th>Product</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 50</td>
<td>0 - 5000</td>
<td>SVA-2300</td>
<td>SVC-230</td>
<td>$1,341.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SVM-230B (w/brake)</td>
<td>$1,530.00</td>
</tr>
</tbody>
</table>

J_m = Motor Inertia = 0.038 lb-in-s^2 = (0.00433 kg - m^2)

SureServo Communications Cables for Multi-drop Networks

<table>
<thead>
<tr>
<th>Product</th>
<th>Price</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVC-MDCOM-CBL</td>
<td>$27.50</td>
<td>RS-422/485 serial communication cable for use with multidrop networks; 3ft length; IEEE 1394 plug to unterminated wires; compatible with all SureServo systems. Facilitates connection between the SureServo drive serial port and host controllers.</td>
</tr>
<tr>
<td>SVC-232RJ12-CBL-2*</td>
<td>$8.25</td>
<td>ZIPLink SureServo Drives cable with a 6-pin RJ12 connector to a 6-pin IEEE 1394 connector, shielded, twisted pair, 2.0 meter (6.6 ft.) length. For RS-232 connection to all SureServo amplifiers.</td>
</tr>
<tr>
<td>SVC-485RJ12-CBL-2*</td>
<td>$10.00</td>
<td>ZIPLink SureServo amplifier communication cable, RJ12 male to 6-pin IEEE 1394 connector, shielded, twisted pair, 2.0 meter (6.6 ft.) length. Cable used in conjunction with ZL-COM-RJ12xxx distribution module can access a compatible RS-485 device network.</td>
</tr>
<tr>
<td>SVC-485HD15S-CBL-2*</td>
<td>$8.75</td>
<td>ZIPLink SureServo Drives cable with a HD 15-pin male to a 6-pin IEEE 1394 connector, shielded, twisted pair, 2.0 meter (6.6 ft.) length. For RS-485 connection to all SureServo amplifiers.</td>
</tr>
</tbody>
</table>

* Refer to the ZIPLinks Wiring Solutions section for complete information regarding the ZIPLink cables.
AC Servo System Software

SureServo Pro configuration software
SureServo Pro is an optional free downloadable configuration software package for the SureServo drives. With SureServo Pro installed, the personal computer may be directly connected to the servo drive’s serial port via the PC’s RS-232 serial port*. A six-foot configuration cable (SVC-PCCFG-CBL, $19.50) is available to make the connection between the drive serial port and PC DB-9 serial port simple.

*Note: Use our USB-RS232 converter cable in conjunction with the SVC-PCCFG-CBL cable on PCs having only USB ports.

Features
- • Quick Start - The basic setup when you have limited time and just want to get up and running ASAP.
- • Maintenance keypad allows the user to operate the servo system from the PC. This is a great aid during start-up to allow the servo to perform some basic motion and to check the I/O.
- • Detailed - The complete setup for all the drive parameters
- • Tune and check the servo response live using the scope feature.
- • Upload and download the drive setup. Save the drive setup as a file for future use.
- • Edit the drive setup
- • View all drive faults
- • Trend drive variables in real time

Parameter views
The SureServo Pro configuration tool logically organizes over 165 servo drive parameters into five tabbed groups. Each parameter has a factory default that usually allows the servo to run “out-of-the-box”.

The parameters can be easily changed with available options or setting ranges displayed. Tuning modes and parameters can also be changed using SureServo Pro. After the parameters have been defined, the complete setup can be stored and archived. Drive configurations can be uploaded, edited, saved, and downloaded as often as necessary.

SureServo Software and Configuration Cables

<table>
<thead>
<tr>
<th>Product</th>
<th>Price</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV-PRO</td>
<td>$9.25</td>
<td>CD with SureServo Pro configuration software</td>
</tr>
<tr>
<td>SVC-PCCFG-CBL</td>
<td>$24.00</td>
<td>Six-foot RS-232 communications cable; connects servo drive serial port to PC DB-9 serial port. For PCs having only USB ports, use our USB-RS232 converter cable in conjunction with the SVC-PCCFG-CBL cable.</td>
</tr>
<tr>
<td>SVC-485CFG-CBL-2</td>
<td>$11.50</td>
<td>ZIPLink SureServo amplifier configuration cable, 8-pin IEEE 1394 connector to RJ45 connector, shielded, twisted pair, 2.0 meter (6.6 ft.) length. Use this cable in conjunction with our USB-485M serial adapter to connect any SureServo amplifier to a PC. Eliminates the need to reprogram networked servo drives from RS485 to RS232 when connecting to a PC.</td>
</tr>
</tbody>
</table>

* Refer to the ZIPLinks Wiring Solutions section for complete information regarding ZIPLink cable SVC-485CFG-CBL-2.
SureServo Pro configuration software - Parameter views (continued)

Parameter View Example Screen - Monitor Parameters

Scope
SureServo Pro includes a powerful scope function that allows the user to have as many as three channels of data displayed simultaneously. Each channel has a drop-down table to select the data to be displayed. The scope also has a trigger mode and timebase selection. This function is a valuable tool for tuning SureServo drives.

Parameter View Example Screen - Extended Parameters

Maintenance screen
A maintenance keypad allows the user to operate the servo system from the PC. This is a great aid during start-up to allow the servo to perform some basic motion and to check the I/O.

Parameter View Example Screen - Communication Parameters
SureServo systems run “out-of-the-box”... but may be reconfigured for many applications!

The SureServo drives are fully digital and include over 165 programmable parameters. For convenience, the parameters are grouped into five categories:

1) Monitor parameters
2) Basic parameters
3) Extended parameters
4) Communication parameters
5) Diagnostic parameters.

All parameters have commonly used default values which allow you to operate the SureServo system “out-of-the-box”. However, the programmability and large variety of parameters make the SureServo systems suitable for a very broad range of applications, including almost all types of general purpose industrial machinery such as assembly, test, packaging, machine tool, and robotics.
# AC Servo Drive Specifications

## Servo drive specifications

<table>
<thead>
<tr>
<th>General Drive Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Permissible Frequency</strong></td>
</tr>
<tr>
<td><strong>Encoder Resolution / Feedback Resolution</strong></td>
</tr>
<tr>
<td><strong>Control of Main Circuit</strong></td>
</tr>
<tr>
<td><strong>Tuning Modes</strong></td>
</tr>
<tr>
<td><strong>Dynamic Brake</strong></td>
</tr>
<tr>
<td><strong>Analog Monitor Outputs (2)</strong></td>
</tr>
<tr>
<td><strong>8 Programmable Digital Inputs (45 selectable functions)</strong></td>
</tr>
<tr>
<td><strong>Scalable Encoder Output</strong></td>
</tr>
<tr>
<td><strong>5 Programmable Outputs (9 selectable indicators)</strong></td>
</tr>
<tr>
<td><strong>Communication Interface</strong></td>
</tr>
<tr>
<td><strong>Protective Functions</strong></td>
</tr>
<tr>
<td><strong>Installation Site</strong></td>
</tr>
<tr>
<td><strong>Altitude</strong></td>
</tr>
<tr>
<td><strong>Operating Temperature</strong></td>
</tr>
<tr>
<td><strong>Storage Temperature</strong></td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
</tr>
<tr>
<td><strong>Vibration</strong></td>
</tr>
<tr>
<td><strong>Protection</strong></td>
</tr>
<tr>
<td><strong>Agency Approvals</strong></td>
</tr>
</tbody>
</table>
### Model and Mode Specific Drive Specifications

<table>
<thead>
<tr>
<th>AC Servo Model</th>
<th>SVA-2040</th>
<th>SVA-2100</th>
<th>SVA-2300</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Price</strong></td>
<td>$483.00</td>
<td>$667.00</td>
<td>$1,113.00</td>
</tr>
<tr>
<td><strong>Voltage Phase</strong></td>
<td>Single-phase or Three-phase</td>
<td>Three-phase</td>
<td></td>
</tr>
<tr>
<td><strong>Voltage and Frequency Range</strong></td>
<td>3-phase: 170–255 VAC @ 50/60 Hz ±5%; 1-phase: 200–255 VAC @ 50/60 Hz ±5%</td>
<td>170–255 VAC @ 50/60 Hz ±5%</td>
<td></td>
</tr>
<tr>
<td><strong>Main Circuit Input Current</strong></td>
<td>Single Phase: 3.4A @ 400W, 8.0A @ 1kW; Three Phase: 2.6A @ 400W, 6.2A @ 1kW, 13.6A @ 3kW</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Main Circuit Inrush Current</strong></td>
<td>44A, 77A, 87A</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Main Circuit Power Cycling</strong></td>
<td>Maximum 1 power cycle per minute</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Control Circuit Current and Voltage</strong></td>
<td>43 mA @ 200–255 VAC, 1 phase</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Control Circuit Inrush Current</strong></td>
<td>32A maximum</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cooling System</strong></td>
<td>Natural Air Circulation, Internal Cooling Fan</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Drive Heat Loss</strong></td>
<td>Motor driven *</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Heat Loss</strong></td>
<td>SVL-201(B): 12W, 15W; SVL-204(B): 35W, 45W; SVM-210(B): 50W, 75W, 80W</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>1.5 kg [3.3 lb], 2kg [4lb], 3kg [7lb]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Position Control Mode**

- **Max. Input Pulse Frequency**: Max. 500 kpps (Line driver); Max. 200 kpps (Open collector)
- **Pulse Type**: Pulse + Direction, A phase + B phase Quadrature, CCW pulse + CW pulse
- **Command Source**: External pulse train / Onboard indexer
- **Electronic Gear**: Electronic gear N/M multiple; N: 1–32767, M: 1–32767 (1/50<N/M<200)
- **Torque Limit Operation**: Set by parameters or by analog input
- **Feed Forward Compensation**: Set by parameters

**Analog Input Command**

- **Voltage Range**: Bipolar ±10 VDC
- **Input Resistance**: 10 kΩ
- **Time Constant**: 2.2 μs
- **Resolution**: (Varies with input voltage) 13 bits @ 0V~1V, 13–10 bits @ 1V~2V, 10 bits @ 2V~10V

**Speed Control Range**

- **Command Source**: External analog signal / Onboard indexer
- **Smoothing Strategy**: Low-pass and S-curve filter
- **Frequency Response Characteristic**: Maximum 450 Hz
- **Speed Accuracy (at rated rotation speed)**: 0.01% or less at 0 to 100% load fluctuation
- **0.01% or less at ±10% power fluctuation**
- **0.01% or less at 0 to 50°C ambient temperature fluctuation**

**Velocity Control Mode**

- **Analog Input Command**: Voltage Range Bipolar ±10 VDC
- **Input Resistance**: 10 kΩ
- **Time Constant**: 2.2 μs
- **Resolution**: 10 bits

**Torque Control Mode**

- **Analog Input Command**: Voltage Range Bipolar ±10 VDC
- **Input Resistance**: 10 kΩ
- **Time Constant**: 2.2 μs
- **Resolution**: 10 bits

**Permissible Time for Overload**: 8 sec. under 200% rated output

### Note

* Drive heat loss varies depending upon which motor is connected to the drive.
AC Servo Motor Specifications

Servo motor overview

Motor Power and Brake Connector
1-foot cable with 6-position connector (Not liquid tight)

Low and Medium Inertia Motors
Low Inertia Model
• 1 kW 100 mm flange

Medium Inertia Models
• 1 kW 130 mm flange
• 2 kW 180 mm flange
• 3 kW 180 mm flange

Keyless Shafts
• Low Inertia Model
  • 1 kW 22 mm diameter

With Shaft Seal (liquid tight)

Encoder Connector
1-foot cable with 9-position connector (Not liquid tight)

Encoder Connector
(Liquid tight when using AutomationDirect cables)

IP65 Housing

All SureServo motors have keyless shafts for use with servo-grade clamp or compression couplings.

1 kW and above

Low and Medium Inertia Motors
Low Inertia Model
• 1 kW 100 mm flange

Medium Inertia Models
• 1 kW 130 mm flange
• 2 kW 180 mm flange
• 3 kW 180 mm flange

Keyless Shafts
• Low Inertia Model
  • 1 kW 22 mm diameter

Without Shaft Seal
(not liquid tight)

Encoder Connector
1-foot cable with 9-position connector (Not liquid tight)

Encoder Connector
(Liquid tight when using AutomationDirect cables)

IP65 Housing

1 kW and above

Motor Power and Brake Connector
1-foot cable with 6-position connector (Not liquid tight)

Keyless Shafts
• 100W 8 mm diameter
• 200W 14 mm diameter
• 400W 14 mm diameter
• 750W 19 mm diameter

750W and below

Encoder Connector
1-foot cable with 9-position connector (Not liquid tight)

Encoder Connector
(Liquid tight when using AutomationDirect cables)

IP65 Housing

Without Shaft Seal
(not liquid tight)

Low Inertia Motors
• 1 kW 100 mm flange
• 200W 60 mm flange
• 400W 60 mm flange
• 750W 80 mm flange

Encoder Connector
1-foot cable with 9-position connector (Not liquid tight)

Encoder Connector
(Liquid tight when using AutomationDirect cables)

IP65 Housing

All SureServo motors have keyless shafts for use with servo-grade clamp or compression couplings.
## AC Servo Motor Specifications

### Inertia Range:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>$322.00</td>
<td>$415.00</td>
<td>$508.00</td>
<td>$543.00</td>
<td>$647.00</td>
<td>$782.00</td>
<td>$719.00</td>
<td>$1,341.00</td>
</tr>
<tr>
<td>Medium</td>
<td>$554.00</td>
<td>$614.00</td>
<td>$716.00</td>
<td>$775.00</td>
<td>$970.00</td>
<td>$1,195.00</td>
<td>$1,202.00</td>
<td>$1,530.00</td>
</tr>
</tbody>
</table>

### Model with brake: Sxx-xxxB

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>$322.00</td>
<td>$415.00</td>
<td>$508.00</td>
<td>$543.00</td>
<td>$647.00</td>
<td>$782.00</td>
<td>$719.00</td>
<td>$1,341.00</td>
</tr>
<tr>
<td>Medium</td>
<td>$554.00</td>
<td>$614.00</td>
<td>$716.00</td>
<td>$775.00</td>
<td>$970.00</td>
<td>$1,195.00</td>
<td>$1,202.00</td>
<td>$1,530.00</td>
</tr>
</tbody>
</table>

### Motor Specifications:

- **Price**
  - $322.00
  - $415.00
  - $508.00
  - $543.00
  - $647.00
  - $782.00
  - $719.00
  - $1,341.00

- **Price**
  - $554.00
  - $614.00
  - $716.00
  - $775.00
  - $970.00
  - $1,195.00
  - $1,202.00
  - $1,530.00

- **Rated output power**
  - W
    - 100
    - 200
    - 400
    - 750
    - 1000
    - 1000
    - 2000
    - 3000

- **Rated torque**
  - N·m
    - 0.32
    - 0.64
    - 1.27
    - 2.39
    - 3.3
    - 4.8
    - 9.4
    - 14.3

- **Maximum torque**
  - N·m
    - 0.95
    - 1.91
    - 3.82
    - 7.16
    - 9.9
    - 15.7
    - 23.5
    - 35.8

- **Rated speed**
  - rpm
    - 3000
    - 2000

- **Max. speed**
  - rpm
    - 5000
    - 4500
    - 3000

- **Rated current**
  - A
    - 1.1
    - 1.7
    - 3.3
    - 5.0
    - 6.8
    - 5.6
    - 13.1
    - 17.4

- **Max. current**
  - A
    - 3.0
    - 4.9
    - 9.3
    - 14.1
    - 18.7
    - 17.6
    - 31.4
    - 42.3

- **Drive input current**
  - 1 phase A
    - 1.0
    - 1.7
    - 3.4
    - 5.9
    - 8.0
    - 8.0

  - 3 phase A
    - 0.8
    - 1.3
    - 2.6
    - 4.7
    - 6.2
    - 9.1

- **Max. radial shaft load**
  - lb
    - 8.4
    - 16.9
    - 33.8
    - 63.4
    - 87.6
    - 138.9
    - 206.0
    - 316.8

- **Max. thrust shaft load**
  - lb
    - 83.2
    - 196
    - 343
    - 490
    - 784

- **Motor Type**
  - Brushless, AC, permanent magnet [Neodymium (Nd), Iron (Fe), Boron (B)]

- **Environmental rating**
  - IP65 motor body, IP40 shaft, IP20 connector, IP65 (requires SunServe cables)

- **Agency Approvals**
  - CE, UL recognized (U.S. and Canada)

**NOTE:** U.S. customary units are for reference only.
AC Servo System Wiring

Standard wiring examples

Position (Pr & Pt) Control Modes

**Default Settings**

- Servo Ready
- At Zero Speed
- Homing Complete
- At Position
- Alarm
- User Supplier 24 VDC

**100 mA max**

Use diode if driving inductive load

**1.5 kΩ min load impedance**

**1.5k Ohm min load impedance**

Connect 35 to 17 only with open collector pulse

† Remove jumper if external 24 VDC is used

†† Optional user supplied 24 VDC

Internal D

Default Settings

- External P
- Internal D
- ±8V
- 1mA max
- Use connection kit part #s ZL-RTB50 & ZL-SVC-CBL-50(-x) for CN1 terminal connections.

**Position (Pr & Pt) Control Modes**

- PCS0 (Pr mode) / TCS0 (Pt mode)
- PCS1 (Pr mode) / TCS1 (Pt mode)

**Regenerative Resistor**

† Remove jumper at D if using external resistor

- VDD
- COM+
- COM–
- DI 1
- DI 2
- DI 3
- DI 4
- DI 5
- DI 6
- DI 7
- DI 8

**CN1***

- MON 1
- GND
- MON 2

- SG
- +8V
- 1mA max

**CN2***

- OA
- /OA
- OB
- /OB
- OZ
- /OZ

**Line Driver Encoder Signal Output (scalable pulse output)**

- 40 mA max

- RS422 TXD–
- RS422 TXD+
- RS422 RXD– & RS232 RX
- RS422 RXD+
- RS232 TX
- GND

**Modbus communication to PC, PLC, etc**

- For the latest prices, please check AutomationDirect.com.
**Velocity and Torque Control Modes**

- **Servo Drive**: Includes connections for power supply and control inputs.
- **Encoder**: Provides feedback to the drive.
- **Line Driver**: Converts analog signals to TTL pulses.
- **Modbus**: Connects to PC, PLC, etc.

**Default Settings**
- **Servo Ready**
- **At Zero Speed**
- **At Speed**
- **Brake Control**
- **Alarm**

**Connection Notes**
- Use connection kit part # ZL-RT50 & ZL-SVC-CBL-50(-x) for CN1 terminal connections.
- Use cable part # SVC-Exx-0x0 for CN2 terminal connections.
- Use cable part # SVC-MDCOM-CBL for CN3 terminal Modbus network connections.

For the latest prices, please check AutomationDirect.com.

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For the latest prices, please check AutomationDirect.com.
Servo drive dimensions

**SVA-2040**

- PE Screw: M4x0.7
- Mounting Screw: M6; quantity (2)
- Mounting Screw Torque: 14 kgf·cm (1.37 N·m)

**SVA-2100**

- PE Screw: M4x0.7
- Mounting Screw: M6; quantity (2)
- Mounting Screw Torque: 14 kgf·cm (1.37 N·m)
Servo drive dimensions (continued)

**SVA-2300**

**Servo motor dimensions**

Low inertia models **SVL-201(B), SVL-202(B), SVL-SVL-204(B), SVL-207(B)**

**SureServo® Motor Dimensions – 100W-750W Low Inertia**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>SVL-201(B)</th>
<th>SVL-202(B)</th>
<th>SVL-204(B)</th>
<th>SVL-207(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>4.5 [0.1772]</td>
<td>5.5 [0.2165]</td>
<td>6.6 [0.2598]</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>8 +0.0/-0.009 [8h6]</td>
<td>14 +0.0/-0.011 [14h6]</td>
<td>19 +0.0/-0.013 [19h6]</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>30 +0.0/-0.021 [30h7]</td>
<td>50 +0.0/-0.025 [50h7]</td>
<td>70 +0.0/-0.030 [70h7]</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>25 [0.98]</td>
<td>30 [1.18]</td>
<td>35 [1.38]</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>5 [0.197]</td>
<td>6 [0.236]</td>
<td>8 [0.315]</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>2.5 [0.098]</td>
<td>3 [0.118]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable length</td>
<td>300mm (12 inches)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**UNITS: mm [in]. (Inches are for reference only; not included on diameter dimensions for accuracy.)**
Servo motor dimensions (continued)

Low inertia models **SVL-210(B)**

Medium inertia models **SVM-210(B), SVM-220(B), SVM-230(B)**

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### SureServo® Motor Dimensions - 1000W Low Inertia

<table>
<thead>
<tr>
<th>Dimension</th>
<th>SVL-210(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100 [3.937]</td>
</tr>
<tr>
<td>B</td>
<td>9 [0.3543]</td>
</tr>
<tr>
<td>C</td>
<td>115 +0.2/-0.2 [4.528]</td>
</tr>
<tr>
<td>D</td>
<td>22 +0.0/-0.013 [22h6]</td>
</tr>
<tr>
<td>E</td>
<td>95 +0.0/-0.035 [95h7]</td>
</tr>
<tr>
<td>F (w/o brake)</td>
<td>158 [6.22]</td>
</tr>
<tr>
<td>F (with brake)</td>
<td>190 [7.48]</td>
</tr>
<tr>
<td>G</td>
<td>45 [1.77]</td>
</tr>
<tr>
<td>H</td>
<td>17 [0.669]</td>
</tr>
<tr>
<td>I</td>
<td>7 [0.28]</td>
</tr>
</tbody>
</table>

**UNITS: mm [in]** (Inches are for reference only; not included on diameter dimensions for accuracy.)

---

### SureServo® Motor Dimensions - 1000W-3000W Medium Inertia

<table>
<thead>
<tr>
<th>Dimension</th>
<th>SVM-210(B)</th>
<th>SVM-220(B)</th>
<th>SVM-230(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>130 [5.118]</td>
<td>180 [7.087]</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>9 [0.3543]</td>
<td>13.5 [0.5315]</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>145 +0.2/-0.2 [5.709]</td>
<td>200 +0.2/-0.2 [7.874]</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>22 +0.0/-0.013 [22h6]</td>
<td>35 +0.0/-0.016 [35h6]</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>110 +0.0/-0.035 [110h7]</td>
<td>114.3 +0/-0.035 [114.3h7]</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>55 [2.17]</td>
<td>75 [2.95]</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>15 [0.591]</td>
<td>20 [0.787]</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>4 [0.157]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**UNITS: mm [in]** (Inches are for reference only; not included on diameter dimensions for accuracy.)
AC Servo System Accessories

Accessories

External Regeneration Resistors

Use external resistors to provide additional regenerative capacity and to dissipate heat away from the servo drive.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Resistance</th>
<th>SureServo Drives</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS-25P0-BR</td>
<td>40Ω</td>
<td>SVA-2040</td>
<td>$80.00</td>
</tr>
<tr>
<td>GS-2010-BR-ENC</td>
<td>2Ω</td>
<td>SVA-2100, SVA-2300</td>
<td>$242.00</td>
</tr>
</tbody>
</table>

AC Line Filters

Input EMI filters reduce electromagnetic interference or noise on the input side of the servo drive. They are required for CE compliance and recommended for installations prone to or sensitive to electromagnetic interference.

<table>
<thead>
<tr>
<th>SureServo Drives</th>
<th>AC Input Power</th>
<th>EMI Filter Rating</th>
<th>EMI Filter Part Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVA-2040</td>
<td>Single-Phase</td>
<td>250V, 1-phase, 20A</td>
<td>20DRT1W3S</td>
<td>$81.00</td>
</tr>
<tr>
<td>Three-Phase</td>
<td>250V, 3-phase</td>
<td>10TDT1W4C</td>
<td></td>
<td>$86.00</td>
</tr>
<tr>
<td>SVA-2100</td>
<td>Single-Phase</td>
<td>250V, 1-phase, 20A</td>
<td>20DRT1W3S</td>
<td>$81.00</td>
</tr>
<tr>
<td>Three-Phase</td>
<td>250V, 3-phase</td>
<td>10TDT1W4C</td>
<td></td>
<td>$86.00</td>
</tr>
<tr>
<td>SVA-2300</td>
<td>Three-Phase</td>
<td>250V, 3-phase, 26A</td>
<td>26TDT1W4C</td>
<td>$119.00</td>
</tr>
</tbody>
</table>

Edison Fuses & Fuji Contactors

<table>
<thead>
<tr>
<th>SureServo Drives</th>
<th>Input Type</th>
<th>Input Voltage</th>
<th>Edison Fuse - Class CC</th>
<th>Price</th>
<th>Contactor**</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVA-2040</td>
<td>Main Input Power</td>
<td>230V 3-Phase</td>
<td>HCTR4</td>
<td>$103.00</td>
<td>SC-E02-xxx</td>
<td>varies</td>
</tr>
<tr>
<td>SVA-2100</td>
<td>Main Input Power</td>
<td>230V 3-phase</td>
<td>HCTR7-5</td>
<td>$114.00</td>
<td>SC-E03-xxx</td>
<td>varies</td>
</tr>
<tr>
<td>SVA-2300</td>
<td>Main Input Power</td>
<td>230V 3-phase</td>
<td>HCTR15</td>
<td>$97.00</td>
<td>SC-E04-xxx</td>
<td>varies</td>
</tr>
<tr>
<td>SVA-2040</td>
<td>Control Input Power</td>
<td>230V 1-phase</td>
<td>HCTR4</td>
<td>$103.00</td>
<td>SC-E02-xxx</td>
<td>varies</td>
</tr>
<tr>
<td>SVA-2100</td>
<td>Control Input Power</td>
<td>230V 1-phase</td>
<td>HCTR10</td>
<td>$103.00</td>
<td>SC-E03-xxx</td>
<td>varies</td>
</tr>
</tbody>
</table>

* Fuses are sold in packages of 10.
** Note: For contactors, xxx = coil voltage (for example, SC-E02-220VAC).