

# ACCU ELECTRIC MOTORS INC

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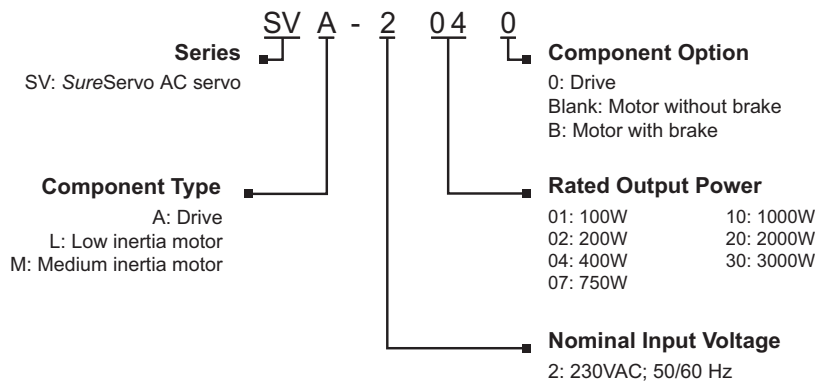
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Servicing USA and Canada

# SureServo™ AC Servo System Configuration

## SureServo series drives and motors part numbering system



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



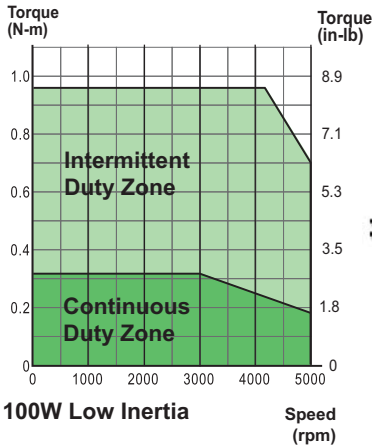
## SureServo AC servo drive, motor, and cable combinations

Inertia and Power		Drive and Motor			Power Cables				Encoder Feedback Cables				Misc.
Inertia	Power	Servo drive	Servo motor without brake (note)	Servo motor with brake (note)	Power Cable - 10 ft	Power Cable - 20 ft	Power Cable - 30 ft	Power Cable - 60 ft	Encoder Feedback Cable - 10 ft	Encoder Feedback Cable - 20 ft	Encoder Feedback Cable - 30 ft	Encoder Feedback Cable - 60 ft	ZIPLink Cable Kit
Low inertia	100W	SVA-2040	SVL-201	SVL-201B	SVC-PFL-010	SVC-PFL-020	SVC-PFL-030	SVC-PFL-060	SVC-EFL-010	SVC-EFL-020	SVC-EFL-030	SVC-EFL-060	ASD-BM-50A
	200W		SVL-202	SVL-202B									
	400W		SVL-204	SVL-204B									
	750W		SVL-207	SVL-207B									
	1000W	SVA-2100	SVL-210	SVL-210B	SVC-PHM-010	SVC-PHM-020	SVC-PHM-030	SVC-PHM-060	SVC-EHH-010	SVC-EHH-020	SVC-EHH-030	SVC-EHH-060	
Medium inertia	1000W	SVA-2300	SVM-210	SVM-210B	SVC-PHH-010	SVC-PHH-020	SVC-PHH-030	SVC-PHH-060	SVC-EHH-010	SVC-EHH-020	SVC-EHH-030	SVC-EHH-060	
	2000W		SVM-220	SVM-220B									
	3000W		SVM-230	SVM-230B									

**NOTE:** EACH SERVO MOTOR REQUIRES AN ENCODER FEEDBACK CABLE AND A POWER CABLE. THE MOTOR POWER CABLE INCLUDES BRAKE POWER WIRES FOR THE OPTIONAL MOTOR BRAKE.

- PLC Overview
- DL05/06 PLC
- DL105 PLC
- DL205 PLC
- DL305 PLC
- DL405 PLC
- Field I/O
- Software
- C-more HMIs
- Other HMI
- AC Drives
- Motors
- Steppers/Servos
- Motor Controls
- Proximity Sensors
- Photo Sensors
- Limit Switches
- Encoders
- Current Sensors
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- Relays/Timers
- Comm.
- TB's & Wiring
- Power
- Circuit Protection
- Enclosures
- Appendix
- Part Index

## 100W Low Inertia System



**For all systems:**  
Order programming software and cable if needed (see p. 15-22)

1.



Servo Drive  
**SVA-2040** <--->

$J_m = \text{Motor Inertia} = 0.000027 \text{ lb-in-s}^2 (0.000003 \text{ kg} \cdot \text{m}^2)$

### SureServo Motor

2.



**SVL-201** <--->  
**SVL-201B (w/brake)** <--->

### Motor Power Cable (1)

3.



**SVC-PFL-010 (10')** <--->  
**SVC-PFL-020 (20')** <--->  
**SVC-PFL-030 (30')** <--->  
**SVC-PFL-060 (60')** <--->

### Motor Encoder Cable (1)

4.



**SVC-EFL-010 (10')** <--->  
**SVC-EFL-020 (20')** <--->  
**SVC-EFL-030 (30')** <--->  
**SVC-EFL-060 (60')** <--->

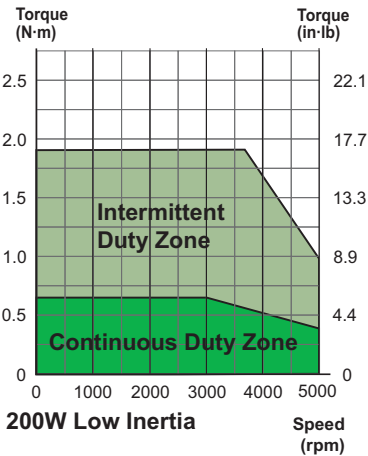
### ZIPLink Kit for CN1

5.



**ASD-BM-50A** <--->

## 200W Low Inertia System



1.



Servo Drive  
**SVA-2040** <--->

$J_m = \text{Motor Inertia} = 0.00016 \text{ lb-in-s}^2 (0.000018 \text{ kg} \cdot \text{m}^2)$

### SureServo Motor

2.



**SVL-202** <--->  
**SVL-202B (w/brake)** <--->

### Motor Power Cable (1)

3.



**SVC-PFL-010 (10')** <--->  
**SVC-PFL-020 (20')** <--->  
**SVC-PFL-030 (30')** <--->  
**SVC-PFL-060 (60')** <--->

### Motor Encoder Cable (1)

4.



**SVC-EFL-010 (10')** <--->  
**SVC-EFL-020 (20')** <--->  
**SVC-EFL-030 (30')** <--->  
**SVC-EFL-060 (60')** <--->

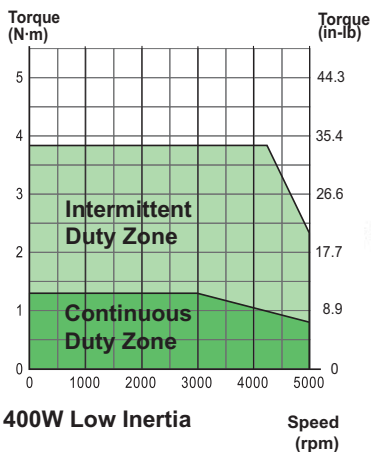
### ZIPLink Kit for CN1

5.



**ASD-BM-50A** <--->

## 400W Low Inertia System



1.



Servo Drive  
**SVA-2040** <--->

$J_m = \text{Motor Inertia} = 0.0003 \text{ lb-in-s}^2 (0.000034 \text{ kg} \cdot \text{m}^2)$

### SureServo Motor

2.



**SVL-204** <--->  
**SVL-204B (w/brake)** <--->

### Motor Power Cable (1)

3.



**SVC-PFL-010 (10')** <--->  
**SVC-PFL-020 (20')** <--->  
**SVC-PFL-030 (30')** <--->  
**SVC-PFL-060 (60')** <--->

### Motor Encoder Cable (1)

4.



**SVC-EFL-010 (10')** <--->  
**SVC-EFL-020 (20')** <--->  
**SVC-EFL-030 (30')** <--->  
**SVC-EFL-060 (60')** <--->

### ZIPLink Kit for CN1

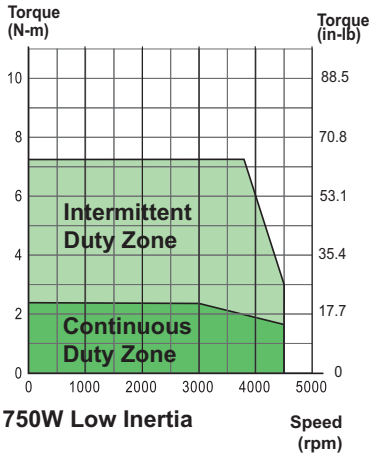
5.



**ASD-BM-50A** <--->

# SureServo™ AC Servo System Configuration

## 750W Low Inertia System

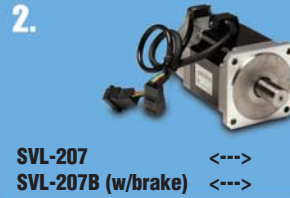


$J_m = \text{Motor Inertia} = .00096 \text{ lb-in-s}^2 \text{ (} 0.000108 \text{ kg} \cdot \text{m}^2 \text{)}$

**For all systems:**  
Order programming software and cable if needed (see p. 15-22)



### SureServo Motor



### Motor Power Cable (1)



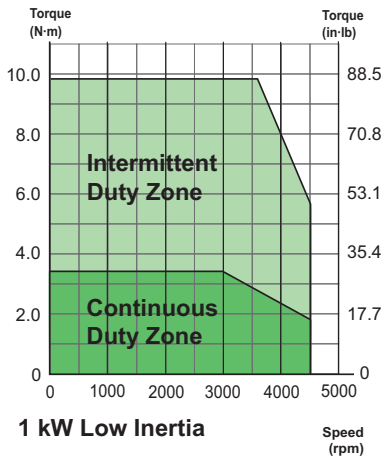
### Motor Encoder Cable (1)



### Z/PLink Kit for CN1



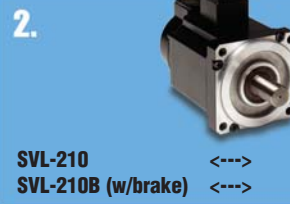
## 1 kW Low Inertia System



$J_m = \text{Motor Inertia} = .0023 \text{ lb-in-s}^2 \text{ (} 0.00026 \text{ kg} \cdot \text{m}^2 \text{)}$



### SureServo Motor



### Motor Power Cable (1)



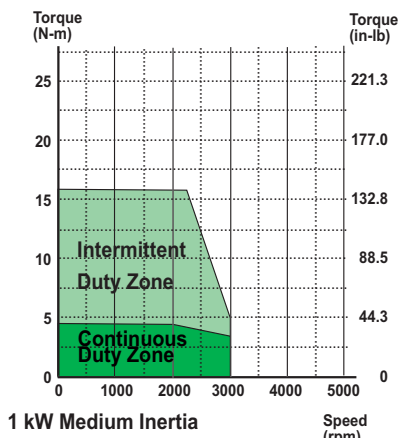
### Motor Encoder Cable (1)



### Z/PLink Kit for CN1



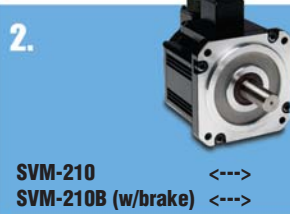
## 1 kW Medium Inertia System



$J_m = \text{Motor Inertia} = .0053 \text{ lb-in-s}^2 \text{ (} 0.000598 \text{ kg} \cdot \text{m}^2 \text{)}$



### SureServo Motor



### Motor Power Cable (1)



### Motor Encoder Cable (1)

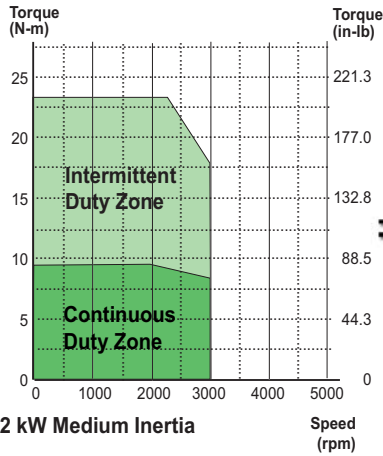


### Z/PLink Kit for CN1



# SureServo™ AC Servo System Configuration

## 2 kW Medium Inertia System



$$J_m = \text{Motor Inertia} = .014 \text{ lb-in-s}^2 = (0.00158 \text{ kg} \cdot \text{m}^2)$$

**For all systems:**  
Order programming software and cable if needed (see p. 15-22)



**Servo Drive**  
**SVA-2300** <--->

### SureServo Motor

**2.**

**SVM-220** <--->  
**SVM-220B (w/brake)** <--->

### Motor Power Cable (1)

**3.**

**SVC-PHH-010 (10')** <--->  
**SVC-PHH-020 (20')** <--->  
**SVC-PHH-030 (30')** <--->  
**SVC-PHH-060 (60')** <--->

### Motor Encoder Cable (1)

**4.**

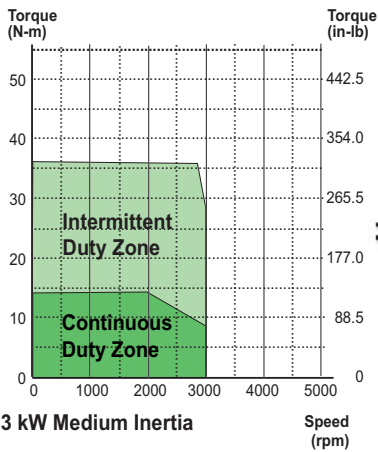
**SVC-EHH-010 (10')** <--->  
**SVC-EHH-020 (20')** <--->  
**SVC-EHH-030 (30')** <--->  
**SVC-EHH-060 (60')** <--->

### ZIPLink Kit for CN1

**5.**

**ASD-BM-50A** <--->

## 3 kW Medium Inertia System



$$J_m = \text{Motor Inertia} = 0.038 \text{ lb-in-s}^2 = (0.00433 \text{ kg} \cdot \text{m}^2)$$



**Servo Drive**  
**SVA-2300** <--->

### SureServo Motor

**2.**

**SVM-230** <--->  
**SVM-230B (w/brake)** <--->

### Motor Power Cable (1)

**3.**

**SVC-PHH-010 (10')** <--->  
**SVC-PHH-020 (20')** <--->  
**SVC-PHH-030 (30')** <--->  
**SVC-PHH-060 (60')** <--->

### Motor Encoder Cable (1)

**4.**

**SVC-EHH-010 (10')** <--->  
**SVC-EHH-020 (20')** <--->  
**SVC-EHH-030 (30')** <--->  
**SVC-EHH-060 (60')** <--->

### ZIPLink Kit for CN1

**5.**

**ASD-BM-50A** <--->

**NOTE: ALL MOTOR POWER CABLES INCLUDE BRAKE POWER WIRES FOR THE OPTIONAL MOTOR BRAKE.**

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- Proximity Sensors
- Photo Sensors
- Limit Switches
- Encoders
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- Comm.
- TB's & Wiring
- Power
- Circuit Protection
- Enclosures
- Appendix
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## Servo drive overview

**Power On LED**  
Main power is ON

**LED Display**  
The LED display has 5 full digits and is used to indicate servo status and alarms

**Keypad**  
Five Function keys:  
MODE: Press to select or change mode  
NEXT: Press to shift left  
UP: Press to increase values  
DOWN: Press to decrease values  
ENTER: Press to enter value

**Control Power Terminal**  
Single-phase power 230 VAC, 50/60 Hz is connected to L1 and L2

**Main Power Terminal**  
Three-phase power 230 VAC, 50/60 Hz is connected to R, S and T (Single-phase power 230 VAC 50/60 Hz may be connected to R and S for the low inertia systems)

**Motor Output Terminal**  
The servo motor power cable is connected to U, V and W. Use our factory made and tested cables available in 10, 20, 30 or 60 foot lengths for easy connection.

**Regenerative Resistor Terminal**  
1. When the internal regenerative resistor is used, the P and D terminal are connected together while the P and C connection is left open.  
2. When an external regenerative resistor is used, it is connected across the P and C terminals while the P and D connection is left open. Use our factory approved resistors for "sure" results.

**Ground Terminals**

**I/O Interface**  
50-pin connector for interfacing the host controller (such as *DirectLOGIC* PLC) and other types of I/O signals.  
Use our *ZIPLink* kit which provides DIN-rail mounted screw terminals for easy connection.  
• Command inputs:  
• Pulse and Direction  
• Encoder Follower  
• Analog Velocity/Torque  
• (8) Digital Inputs  
• (5) Digital Outputs  
• (2) Analog Monitors  
• Encoder Output (scalable)  
A+, A-, B+, B-, Z+, Z-

**Encoder Interface**  
20-pin connector for interfacing the servo motor encoder.  
Use our factory-made and tested cable available in 10, 20, 30 or 60 foot lengths for easy connection.

**Serial Communication Interface**  
6-pin RS-485/422/232 interface to personal computer with *SureServo Pro* set-up software or host controller with Modbus RTU/ASCII protocol. Use our factory-made cables for easy connection to the PC or the host controller.

### 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.

## Servo drive specifications

General Drive Specifications	
<b>Permissible Frequency</b>	50/60 Hz ±5%
<b>Encoder Resolution / Feedback Resolution</b>	2500 lines / 10000 ppr
<b>Control of Main Circuit</b>	SVPWM (Space Vector Pulse Width Modulation) Control
<b>Tuning Modes</b>	Easy / Auto / Manual
<b>Dynamic Brake</b>	Built-in control
<b>Analog Monitor Outputs (2)</b>	Monitor signal can be set by parameters (Output voltage range: ±8V)
<b>8 Programmable Digital Inputs (45 selectable functions)</b>	Servo enable, Alarm reset, Gain switching, Pulse counter clear, Fault stop, CW/CCW over-travel
	Internal parameter selection, Torque limit activation, Velocity limit activation, Control mode selection
<b>Scalable Encoder Output</b>	Encoder signal output A, /A, B, /B, Z, /Z, Line Driver
<b>5 Programmable Outputs (9 selectable indicators)</b>	Servo ready, Servo On, Low velocity, Velocity reached, In Position, Torque limiting, Servo fault, Electromagnetic brake control, Home search completed
<b>Communication Interface</b>	RS-232 / RS-485 / RS-422 / Modbus ASCII & RTU up to 115k Baud
<b>Protective Functions</b>	Overcurrent, Overvoltage, Undervoltage, Overload, Excessive velocity/position error, Encoder error, Regeneration error, Communication error
<b>Installation Site</b>	Indoor location (free from direct sunlight), no corrosive liquid and gas (far away from oil mist, flammable gas, dust)
<b>Altitude</b>	1000m above sea level - maximum
<b>Operating Temperature</b>	0 to 55°C (If operating temperature is above 50°C [131°F], forced cooling will be required). For long-term reliability, the ambient temperature of SureServo systems should be under 45°C (143°F).
<b>Storage Temperature</b>	-20° to 65°C (-4° to 149°F)
<b>Humidity</b>	0 to 90% (non-condensing)
<b>Vibration</b>	9.81 m/s <sup>2</sup> (1G) less than 20Hz, 5.88 m/s <sup>2</sup> (0.6G) 20 to 50 Hz
<b>Protection</b>	IP 20
<b>Agency Approvals</b>	CE; UL listed (U.S. and Canada)

PLC Overview

DL05/06 PLC

DL105 PLC

DL205 PLC

DL305 PLC

DL405 PLC

Field I/O

Software

C-more HMIs

Other HMI

AC Drives

Motors

Steppers/Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pushbuttons/Lights

Process

Relays/Timers

Comm.

TB's & Wiring

Power

Circuit Protection

Enclosures

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## Servo drive specifications (continued)

Model and Mode Specific Drive Specifications				
AC Servo Model		SVA-2040	SVA-2100	SVA-2300
<b>Price</b>		<--->	<--->	<--->
<b>Voltage Phase</b>		Single-phase or Three-phase		Three-phase
<b>Voltage and Frequency Range</b>		3-phase: 170-255 VAC @ 50/60 Hz ±5%; 1-phase: 200-255 VAC @ 50/60 Hz ±5%		170-255 VAC @ 50/60 Hz ±5%
<b>Main Circuit Input Current</b>	<b>Single Phase</b>	3.4A @ 400W	8.0A @ 1kW	-
	<b>Three Phase</b>	2.6A @ 400W	6.2A @ 1kW	13.6A @ 3kW
<b>Main Circuit Inrush Current</b>		44A	77A	87A
<b>Main Circuit Power Cycling</b>		Maximum 1 power cycle per minute		
<b>Control Circuit Current and Voltage</b>		43 mA @ 200-255 VAC, 1 phase		
<b>Control Circuit Inrush Current</b>		32A maximum		
<b>Cooling System</b>		Natural Air Circulation	Internal Cooling Fan	
<b>Weight</b>		1.5 kg	2.0 kg	3.0 kg
<b>Position Control Mode</b>	<b>Max. Input Pulse Frequency</b>		Max. 500 kpps (Line driver); Max. 200 kpps (Open collector)	
	<b>Pulse Type</b>		Pulse + Direction, A phase + B phase Quadrature, CCW pulse + CW pulse	
	<b>Command Source</b>		External pulse train / Onboard indexer	
	<b>Smoothing Strategy</b>		Low-pass and P-curve filter	
	<b>Electronic Gear</b>		Electronic gear N/M multiple N: 1-32767, M: 1-32767(1/50-<N/M<200)	
	<b>Torque Limit Operation</b>		Set by parameters or by analog input	
	<b>Feed Forward Compensation</b>		Set by parameters	
<b>Velocity Control Mode</b>	<b>Analog Input Command</b>	<b>Voltage Range</b>	Bipolar ±10 VDC	
		<b>Input Resistance</b>	10 kΩ	
		<b>Time Constant</b>	2.2 μs	
	<b>Speed Control Range</b>		1:5000	
	<b>Command Source</b>		External analog signal / Onboard indexer	
	<b>Smoothing Strategy</b>		Low-pass and S-curve filter	
	<b>Torque Limit Operation</b>		Set by parameters or via analog input	
	<b>Frequency Response Characteristic</b>		Maximum 450 Hz	
<b>Speed Accuracy (at rated rotation speed)</b>		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		
<b>Torque Control Mode</b>	<b>Analog Input Command</b>	<b>Voltage Range</b>	Bipolar ±10 VDC	
		<b>Input Resistance</b>	10 kΩ	
		<b>Time Constant</b>	2.2 μs	
	<b>Permissible Time for Overload</b>		8 sec. under 200% rated output	
	<b>Command Source</b>		External analog signal / Onboard indexer	
	<b>Smoothing Strategy</b>		Low-pass filter	
	<b>Speed Limit Operation</b>		Set by parameters or via analog input	



# SureServo™ AC Servo Motor Specifications

## Servo motor overview

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

**750W and below**

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



**Without Shaft Seal**  
(not liquid tight)

**IP65 Housing**

- Low Inertia Motors**
- 100W 40 mm flange
  - 200W 60 mm flange
  - 400W 60 mm flange
  - 750W 80 mm flange

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

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

**Motor Power and Brake Connector**  
(Liquid tight when using AutomationDirect cables)

**Encoder Connector**  
(Liquid tight when using AutomationDirect cables)

**1 kW and above**



**With Shaft Seal**  
(liquid tight)

**IP65 Housing**

- 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
- Medium Inertia Models**
- 1 kW 22 mm diameter
  - 2 kW 35 mm diameter
  - 3 kW 35 mm diameter

PLC Overview
DL05/06 PLC
DL105 PLC
DL205 PLC
DL305 PLC
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Photo Sensors
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Current Sensors
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Process
Relays/Timers
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TB's & Wiring
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Enclosures
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# AC Servo Motor Specifications

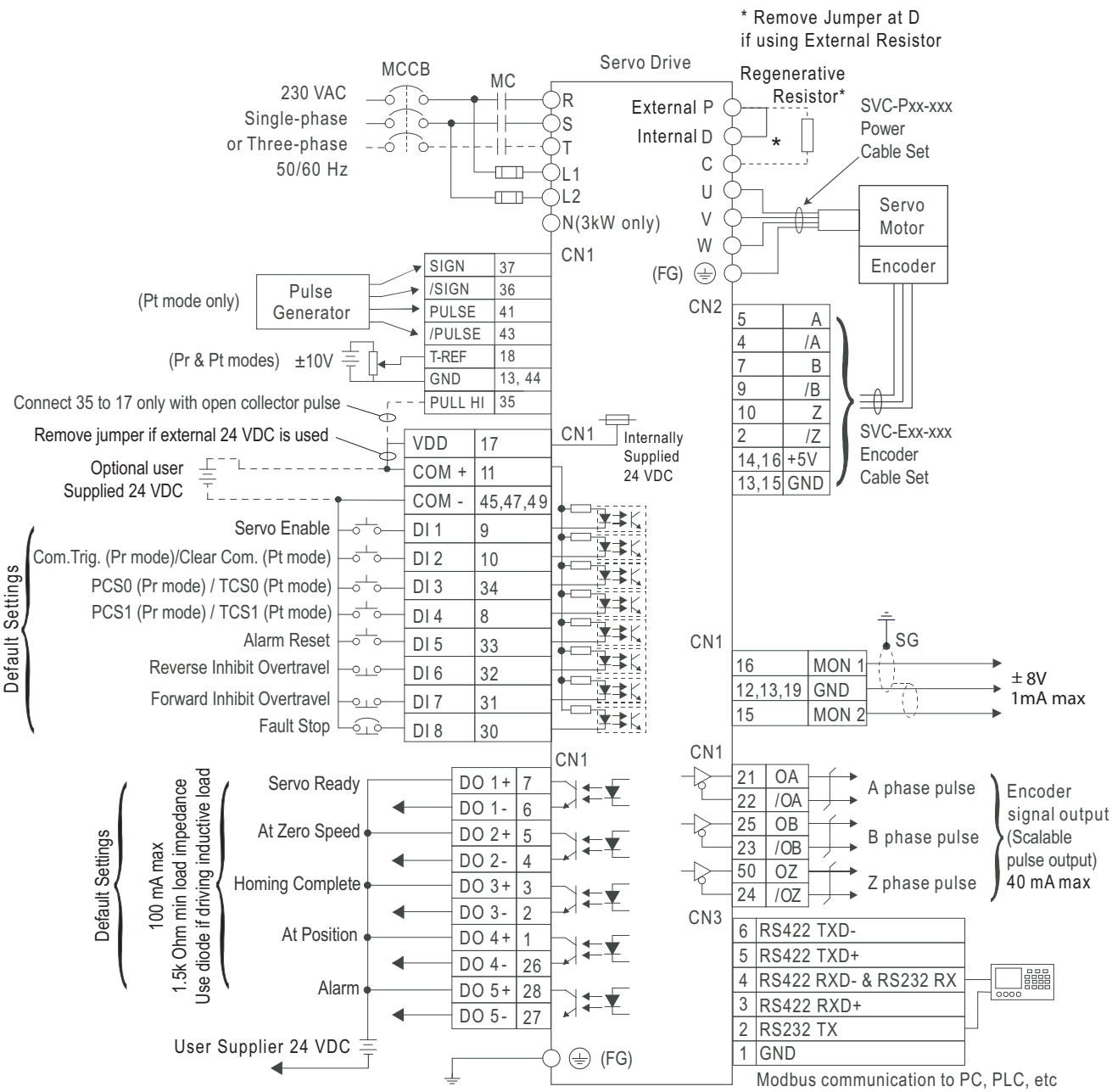
Motor Specifications												
Inertia Range		Low					Medium					
Model Name: Sxx-xxx		SVL-201	SVL-202	SVL-204	SVL-207	SVL-210	SVM-210	SVM-220	SVM-230			
Price		<--->	<--->	<--->	<--->	<--->	<--->	<--->	<--->			
Model with brake: Sxx-xxxB		SVL-201B	SVL-202B	SVL-204B	SVL-207B	SVL-210B	SVM-210B	SVM-220B	SVM-230B			
Price		<--->	<--->	<--->	<--->	<--->	<--->	<--->	<--->			
Rated output power	W	100	200	400	750	1000	1000	2000	3000			
	N-m	0.318	0.64	1.27	2.39	3.3	4.8	9.4	14.3			
Rated torque	lb-in	2.8	5.7	11.2	21.2	29.2	42.5	83.2	125.7			
	N-m	0.95	1.91	3.82	7.16	9.9	15.7	23.5	35.8			
Maximum torque	lb-in	8.4	16.9	33.8	63.4	87.6	138.9	208.0	316.8			
	rpm	3000					2000					
Rated speed	rpm	5000			4500			3000				
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	6.2	9.1	13.6			
Max. radial shaft load	N	78.4	196		343	490		784				
	lb	18	44		77	110		176				
Max. thrust shaft load	N	39.2	68.6			98		392				
	lb	9	15			22		88				
Brake	Voltage	VDC										
	Current	ADC		0.21		0.38		0.4		0.75		
	Holding Torque	N-m	0.32		1.27		2.55		9.3		7.5	
		lb-in	2.83		11.24		22.57		82.3		66.38	
Rotor inertia w/o brake	kg-m <sup>2</sup>	0.03E-4	0.18E-4	0.34E-4	1.08E-4	2.6E-4	5.98E-4	15.8E-4	43.3E-4			
	lb-in-s <sup>2</sup>	0.27E-4	1.59E-4	3.0E-4	9.56E-4	23.0E-4	52.9E-4	139.8E-4	383.2E-4			
Rotor inertia with brake	kg-m <sup>2</sup>	0.06E-4	0.28E-4	0.44E-4	1.32E-4	3.1E-4	8.8E-4	27.8E-4	56.3E-4			
	lb-in-s <sup>2</sup>	0.53E-4	2.48E-4	3.9E-4	11.7E-4	27.4E-4	77.9E-4	246.0E-4	498.3E-4			
Mechanical time constant	ms	0.6	0.9	0.7	0.6	1.7	1.4	1.6	0.9			
Static friction torque	N-m	0.02	0.04		0.08	0.49	0.29	0.98				
Torque constant-KT	N-m/A	0.32	0.39	0.4	0.5	0.56	0.91	0.77	0.86			
Voltage constant-KE	V/rpm	33.7E-3	41.0E-3	41.6E-3	52.2E-3	58.4E-3	95.71E-3	81.1E-3	90.5E-3			
Armature resistance	Ω	20.3	7.5	3.1	1.3	2.052	1.98	0.6	0.162			
Armature inductance	mH	32	24	11	6.3	8.4	13.2	6.1	2.3			
Electrical time constant	ms	1.6	3.2	3.2	4.8	4.1	6.7	10.1	14.2			
Motor Type	Brushless, AC, permanent magnet [Neodymium (Nd), Iron (Fe), Boron (B)]											
Insulation class	Class F											
Insulation resistance	>100 MΩ, 500 VDC											
Insulation strength	1500 VAC, 50 Hz, 60 seconds											
Ambient temperature range	0 to 40°C (32°F to 104°F)											
Operating temperature (measured case temperature)	70°C (158°F)											
Maximum operating temperature (measured case temperature)	70°C + 40°C = 110°C (230°F)											
Storage temperature	-20 to 65°C (-4 to 149°F)											
Operating humidity	20 to 90% RH (non-condensing)											
Storage humidity	20 to 90% RH (non-condensing)											
Vibration / Shock	2.5G / 5.0G											
Environmental rating	IP65 motor body; IP40 shaft; IP20 connector					IP65 (requires SureServo cables)						
Weight without brake	kg	0.5	0.9	1.3	2.5	4.7	4.8	12.0	17.0			
	lb	1.1	1.98	2.87	5.5	10.36	10.58	26.46	37.48			
Weight with brake	kg	0.7	1.4	1.8	3.4	6.3	7.5	19.0	24.0			
	lb	1.54	3.09	3.97	7.5	13.89	16.53	41.89	52.9			
Agency Approvals	CE; UL recognized (U.S. and Canada)											

NOTE: U.S. customary units are for reference only.

# Sure servo™ AC Servo System Wiring

## Standard wiring examples

### Position (Pr & Pt) Control Modes

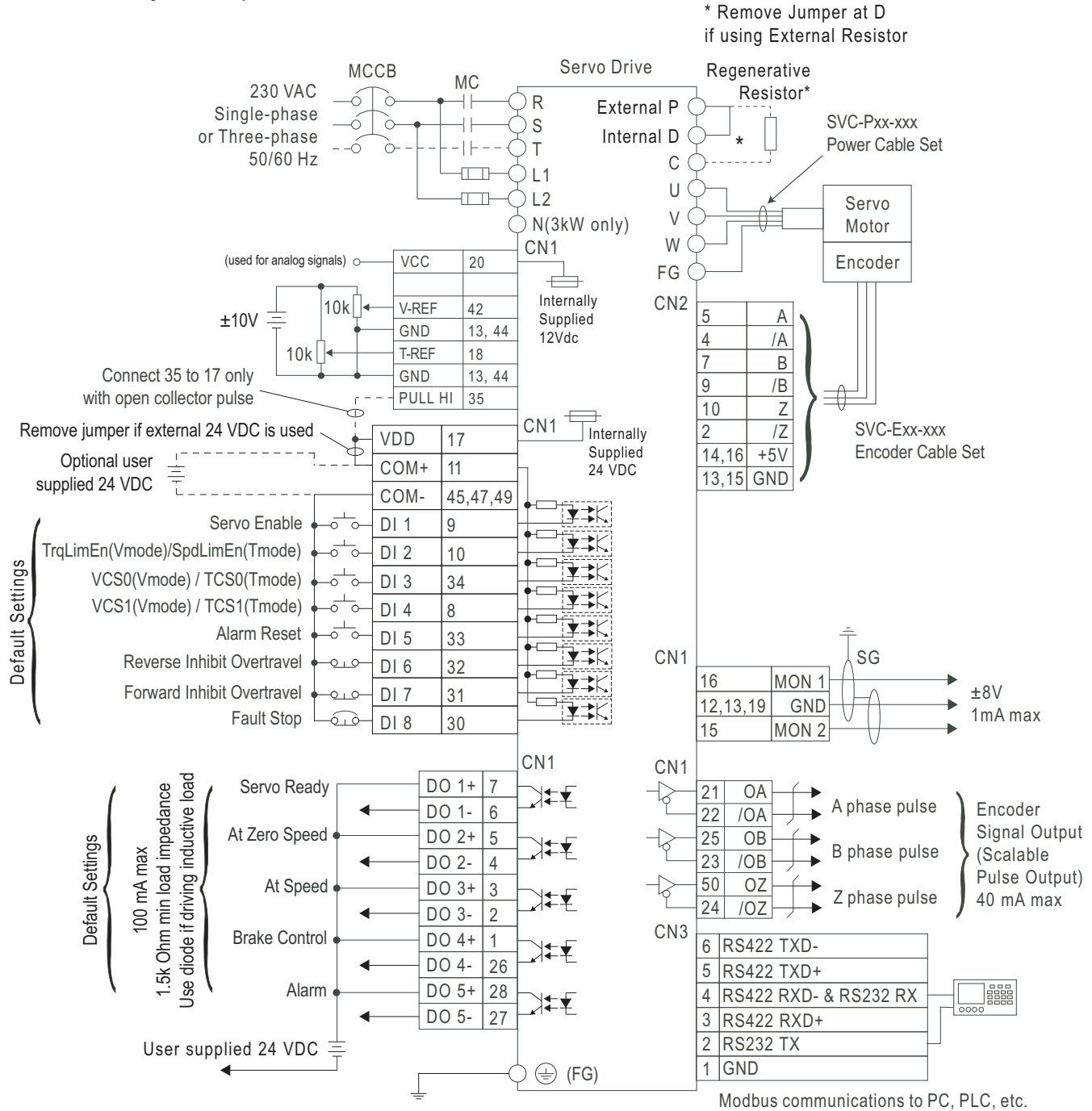


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# Sure servo™ AC Servo System Wiring

## Standard wiring examples (continued)

### Velocity and Torque Control Modes



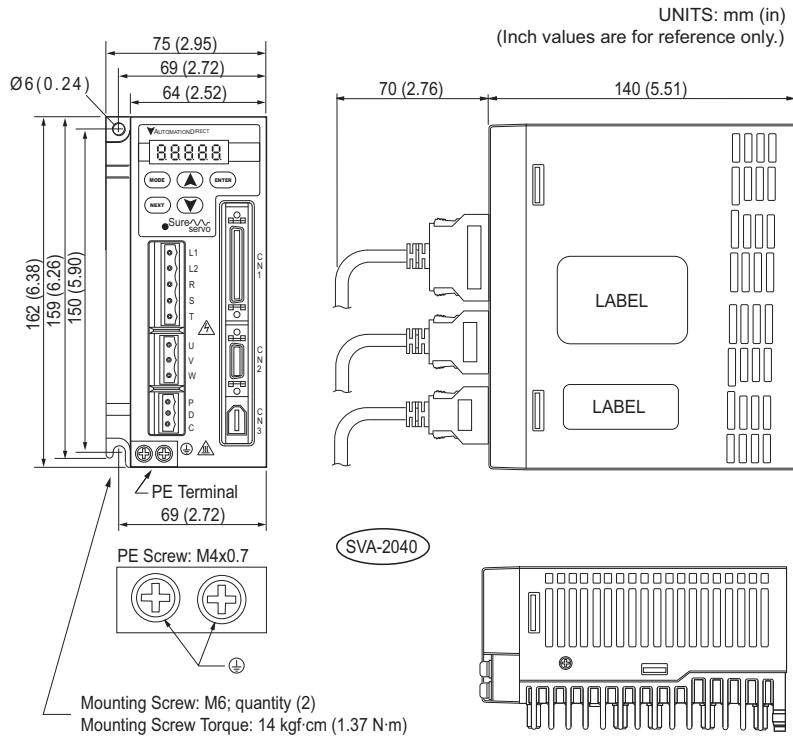
# Sure servo™ AC Servo System Dimensions

## Servo drive dimensions

### SVA-2040



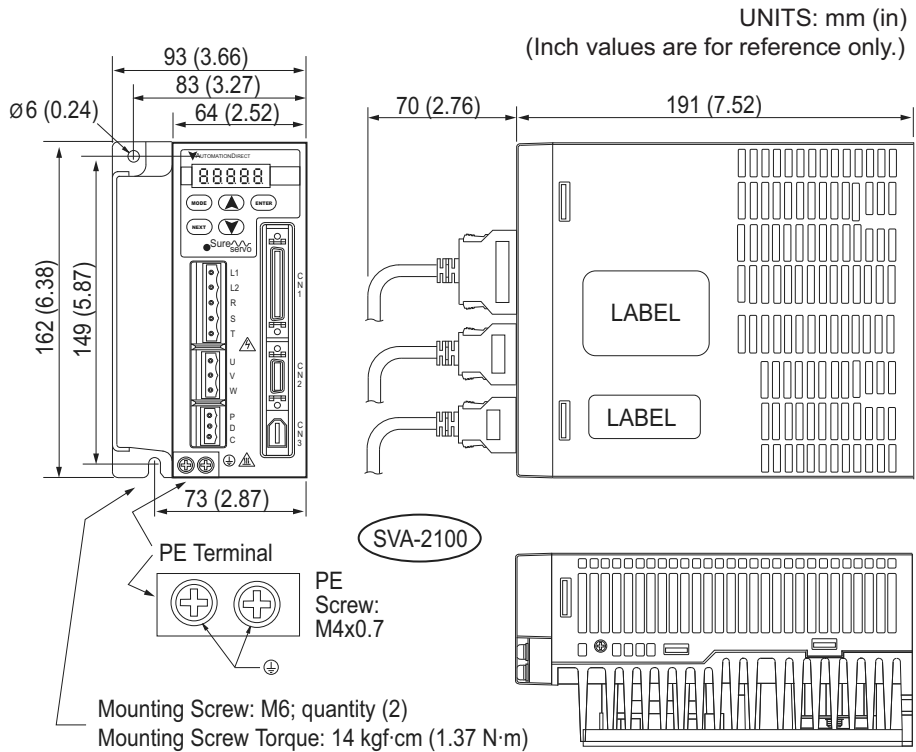
**RECOMMENDED USER SUPPLIED MOUNTING SCREW IS M6.**  
**TIGHTEN TO 14 KGF-CM (1.37 N·M).**



### SVA-2100



**RECOMMENDED USER SUPPLIED MOUNTING SCREW IS M6.**  
**TIGHTEN TO 14 KGF-CM (1.37 N·M).**



PLC Overview

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DL405 PLC

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Motor Controls

Proximity Sensors

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Encoders

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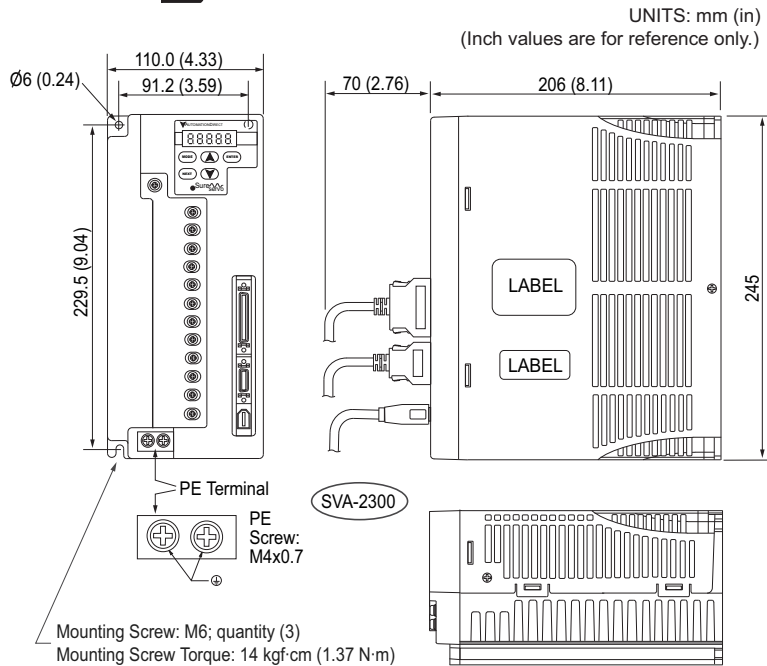
# SureServo™ AC Servo System Dimensions

## Servo drive dimensions (continued)

### SVA-2300

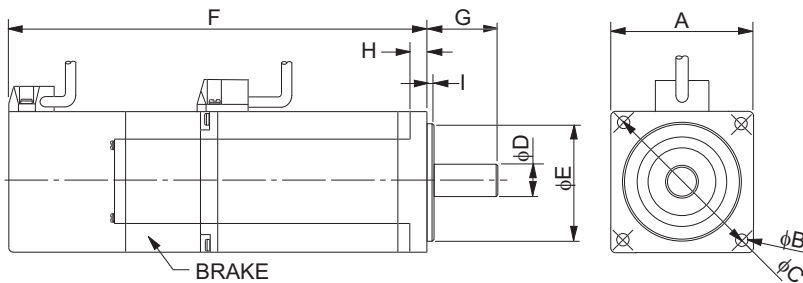


**NOTE: RECOMMENDED USER SUPPLIED MOUNTING SCREW IS M6. TIGHTEN TO 14 KGF·CM (1.37 N·M).**



## Servo motor dimensions

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



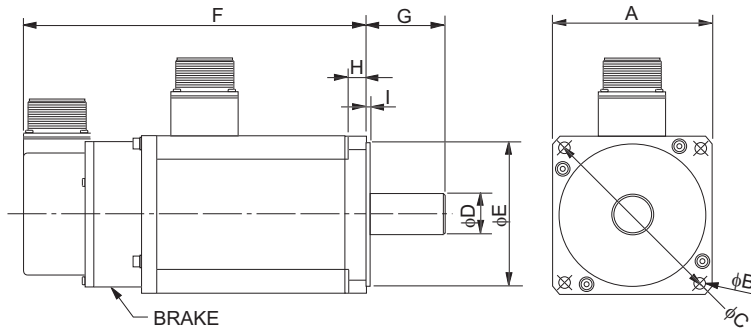
SureServo Motor Dimensions -100W-750W Low Inertia				
Dimension	SVL-201(B)	SVL-202(B)	SVL-204(B)	SVL-207(B)
A	40 [1.575]	60 [2.362]		80 [3.15]
B	4.5 [0.1772]	5.5 [0.2165]		6.6 [0.2598]
C	46 [1.811]	70 [2.756]		90 [3.543]
D	8 +0.0/-0.009 (8h6)	14 +0.0/-0.011 (14h6)		19 +0.0 -0.013 (19h6)
E	30 +0.0/-0.021 (30h7)	50 +0.0/-0.025 (50h7)		70 +0.0/-0.030 (70h7)
F (w/o brake)	100.1 [3.941]	102.4 [4.032]	124.4 [4.898]	135 [5.315]
F (with brake)	135.7 [5.343]	137 [5.394]	159 [6.26]	171.6 [6.756]
G	25 [0.98]	30 [1.18]		35 [1.38]
H	5 [0.197]	6 [0.236]		8 [0.315]
I	2.5 [0.098]		3 [0.118]	
Cable length	300mm (12 inches)			

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

# SureServo™ AC Servo System Dimensions

## Servo motor dimensions (continued)

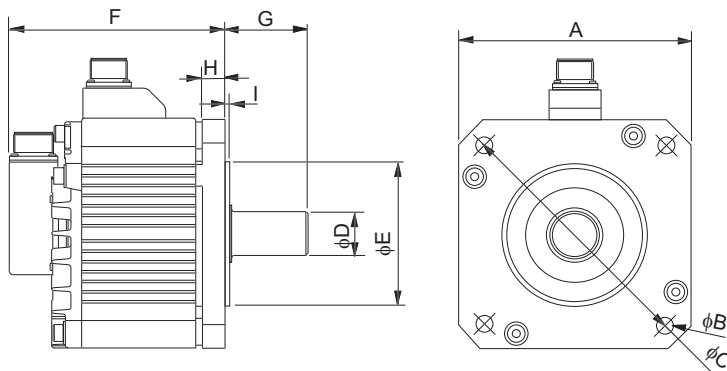
### Low inertia models SVL-210(B)



SureServo Motor Dimensions -1000W Low Inertia	
Dimension	SVL-210(B)
A	100 [3.937]
B	9 [0.3543]
C	115 +0.2/-0.2 [4.258]
D	22 +0.0/-0.013 (22h6)
E	95 +0.0/-0.035 (95h7)
F (w/o brake)	158 [6.22]
F (with brake)	190 [7.48]
G	45 [1.77]
H	17 [0.669]
I	7 [0.28]

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

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



SureServo Motor Dimensions -1000W-3000W Medium Inertia			
Dimension	SVM-210(B)	SVM-220(B)	SVM-230(B)
A	130 [5.118]	180 [7.087]	
B	9 [0.3543]	13.5 [0.5315]	
C	145 +0.2/-0.2 [5.709]	200 +0.2/-0.2 [7.874]	
D	22 +0.0/-0.013 (22h6)	35 +0.0/-0.016 (35h6)	
E	110 +0.0/-0.035 (110h7)	114.3 +0/-0.035 (114.3h7)	
F (w/o brake)	143 [5.63]	164 [6.457]	212 [8.35]
F (with brake)	181 [7.126]	213 [8.386]	258 [10.16]
G	55 [2.17]	75 [2.95]	
H	15 [0.591]	20 [0.787]	
I	4 [0.157]		

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

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# SureServo™ 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.

Part Number	Resistance	SureServo Drives	Price
<b>GS-25P0-BR</b>	40Ω	SVA-2040	<--->
<b>GS-2010-BR-ENC</b>	20Ω	SVA-2100, SVA-2300	<--->



Resistor GS-25P0-BR

### RF Filter

The RF filter is effective at reducing radiated noise from the motor power cable.

Part Number	Price
<b>RF220X00A</b>	<--->



RF Filter RF220X00A

### 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.

SureServo Drives	AC Input Power	EMI Filter Rating	EMI Filter Part Number	Price
SVA-2040	Single-Phase	250V, 1-phase, 20A	<b>20DRT1W3S</b>	<--->
	Three-Phase	250V, 3-phase, 10A	<b>10TDT1W4C</b>	<--->
SVA-2100	Single-Phase	250V, 1-phase, 20A	<b>20DRT1W3S</b>	<--->
	Three-Phase	250V, 3-phase, 10A	<b>10TDT1W4C</b>	<--->
SVA-2300	Three-Phase	250V, 3-phase, 26A	<b>26TDT1W4C</b>	<--->



AC Line Filter 10TDT1W4C



**NOTE:** THESE EMI FILTERS ARE ELECTRICALLY COMPATIBLE WITH THE SURESERVO DRIVES. HOWEVER, THEY ARE INTENDED TO BE MOUNTED NEXT TO THE SERVO DRIVE. DO NOT MOUNT THE FILTER UNDER THE DRIVE. THE DRIVE MOUNTING HOLES ON THESE UNITS ARE INTENDED TO BE USED ONLY WITH AUTOMATIONDIRECT'S LINE OF VFDS.

### Edison Fuses & Fuji Contactors

SureServo Drives	Input Type	Input Voltage	Edison Fuse - Class CC	Price*	Contactor**	Price
SVA-2040	Main Input Power	230V 3-Phase	<b>HCTR4</b>	<--->	<b>SC-E02-xxx</b>	varies
SVA-2100			<b>HCTR7-5</b>	<--->	<b>SC-E03-xxx</b>	varies
SVA-2300			<b>HCTR15</b>	<--->	<b>SC-E04-xxx</b>	varies
SVA-2040	Main Input Power	230V 1-phase	<b>HCTR4</b>	<--->	<b>SC-E02-xxx</b>	varies
SVA-2100			<b>HCTR10</b>	<--->	<b>SC-E03-xxx</b>	varies
SVA-2040 SVA-2100 SVA-2300	Control Input Power	230V 1-phase	<b>HCTR2-5</b>	<--->		



Edison Fuse HCTRx



Fuji Contactor SC-E02-xxx

\* Fuses are sold in packages of 10

\*\* Note: For contactors, xxx = coil voltage (for example, SC-E02-220VAC).