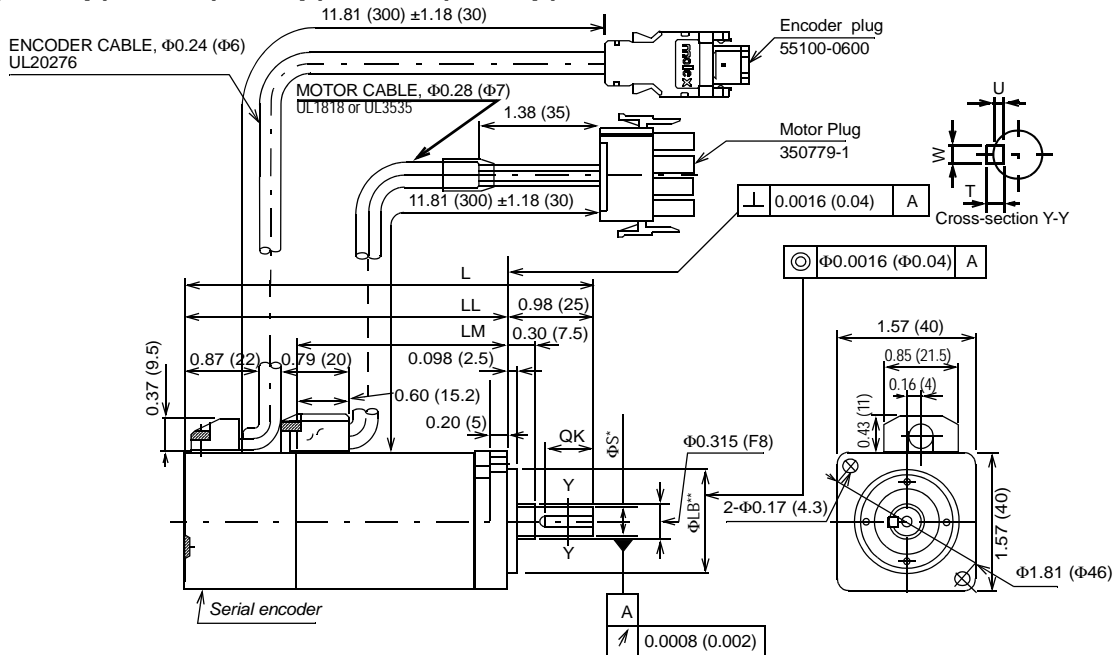


## Dimensions in inches (mm)

### (1) 13-Bit Incremental or 16-Bit Absolute Encoder, without Brake

- 30W (0.04hp), 50W (0.07hp), 100W (0.13hp)

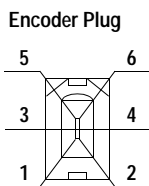


Type SGMAH-†	QK	U	W	T	L	LL	LM	$\Phi S^*$	$\Phi LB^{**}$	Output W (hp)	Approximate Mass lb (kg)	Allowable Radial Load lb (N)	Allowable Thrust Load lb (N)
A3□□F2□	Without Keyway				3.72 (94.5)	2.74 (69.5)	1.44 (36.5)	0.24 (6)	1.18 (30)	30 (0.04)	0.66 (0.3)	15 (68)	12 (54)
A3□□F4□	0.55 (14)	0.047 (1.2)	0.079 (2)	0.079 (2)						50 (0.07)	0.88 (0.4)		
A5□□F2□	Without Keyway				4.02 (102)	3.03 (77)	1.73 (44)					100 (0.13)	
A5□□F4□	0.55 (14)	0.047 (1.2)	0.079 (2)	0.079 (2)									
01□□F2□	Without Keyway				4.7 (119.5)	3.72 (94.5)	2.42 (61.5)	0.31 (8)					
01□□F4□	0.55 (14)	0.07 (1.8)	0.12 (3)	0.12 (3)									

†Some motor dimensions vary for motors with the optional shaft seal: See p.8 for details.

#### Connector Specifications

Specified Tolerances				
Dimension	$\Phi S^*$		$\Phi LB^{**}$	
Unit	Diameter	Tolerance	Diameter	Tolerance
in	0.2362	+0.0000-0.0003	1.181	+0.0000 -0.0008
	0.3150	+0.0000-0.0004		
mm	6.000	+0.000 -0.008	30.000	+0.000 -0.021
	8.000	+0.000 -0.009		



Encoder Connection		
Pin	Output	Wire Color
1	PG 5V	Red
2	PG 0V	Black
3	Battery +	Orange
4	Battery -	White/Orange
5	Data +	Light Blue
6	Data -	White/Light Blue

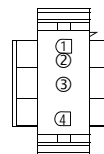
Note: Pins Number 3 and 4 are connectors used for 16-bit absolute encoder option only.

Plug: 55100-0600 (Molex)

Mating connector:

Socket: 54280-0600

#### Motor Plug



Motor Connection		
Pin	Output	Wire Color
1	Phase U	Red
2	Phase V	White
3	Phase W	Blue
4	FG (Frame Ground)	Green/Yellow

Plug 350779-1 (AMP)

Pin: 350561-3 or 350690-3 (Nos. 1 to 3)

Ground pin: 770210-1 (No 4)

Mating connector:

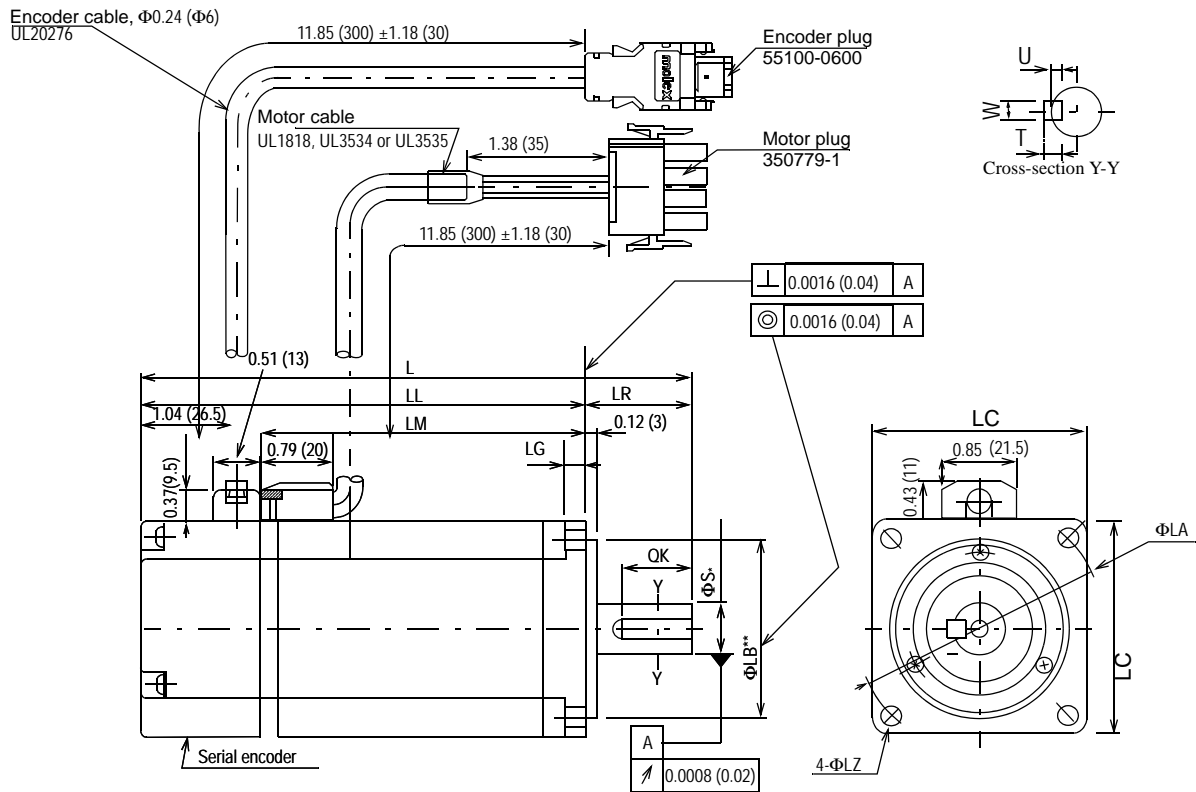
Cap: 350780-1

Socket: 350570-3 or 350689-3

# 100/200V Single-phase Sigma II Servo Systems

- 200W (0.27hp), 400W (0.53hp), 750W (1.01hp)

SGMAH  
Servomotors



Type SGMAH-†	L	LL	LM	LR	LG	LC	ΦLA	ΦLZ	ΦS*	ΦLB**	QK	U	W	T	Output W (hp)	Approximate Mass lb (kg)	Allowable Radial Load lb (N)	Allowable Thrust Load lb (N)
02□□F4□	4.98 (126.5)	3.8 (96.5)	2.46 (62.5)	1.18 (30)	0.24 (6)	2.36 (60)	2.76 (70)	0.22 (5.5)	0.55 (14)	1.97 (50)	0.79 (20)	0.12 (3)	0.2 (5)	0.2 (5)	200 (0.27)	2.43 (1.1)	55 (245)	17 (74)
04A□F4□	6.08 (154.5)	4.9 (124.5)	3.56 (90.5)												400 (0.53)			
08A□F4□	7.28 (185)	5.71 (145)	4.37 (111)	1.57 (40)	0.31 (8)	3.15 (80)	3.54 (90)	0.28 (7)	0.63 (16)	2.76 (70)	1.18 (30)	0.12 (3)	0.2 (5)	0.2 (5)	750 (1.01)	7.5 (3.4)	88 (392)	33 (147)

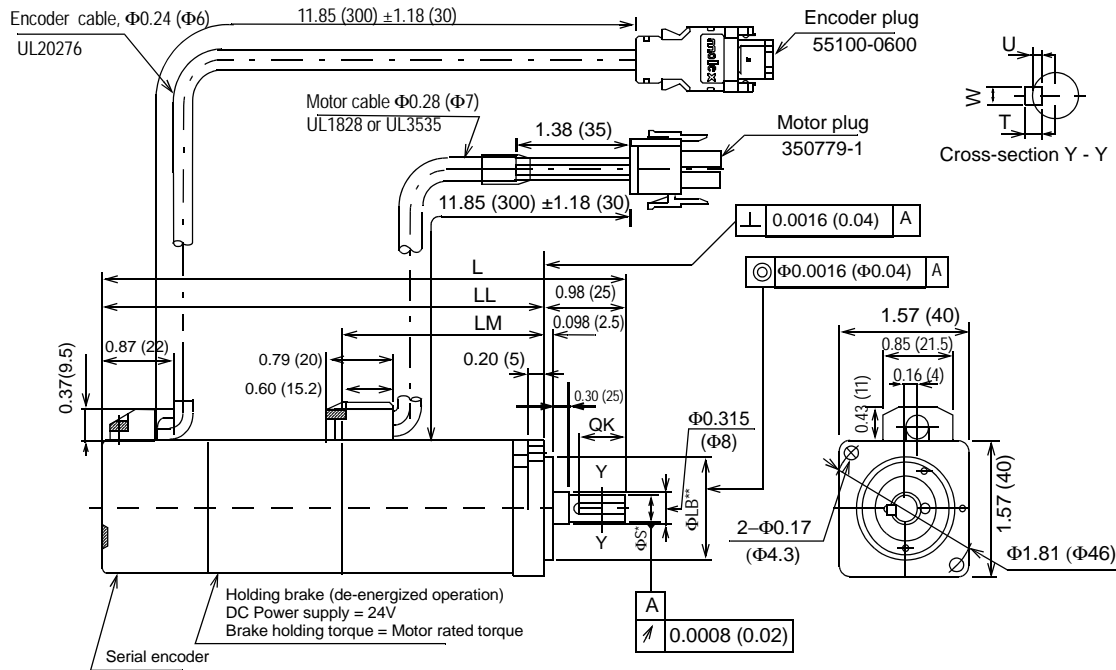
\*Please see the following table for dimension tolerances.

†Some motor dimensions vary for motors with the optional shaft seal: See p.9 for details.

Specified Tolerances				
Dimension	*ΦS		**ΦLB	
Unit	Diameter	Tolerance	Diameter	Tolerance
in	0.5512	+0.0000-0.0004	1.9685	+0.0000 -0.0010
	0.6299	+0.0000-0.0004	2.7559	+0.0000 -0.0012
mm	14.000	+0.000 -0.011	50.000	+0.000 -0.025
	16.000	+0.000 -0.011	70.000	+0.000 -0.030

## (2) 13-Bit Incremental or 16-Bit Absolute Encoder, with Brake

- 30W (0.04hp), 50W (0.07hp), 100W (0.13hp)



Type SGMAH <sup>†</sup>	U	W	T	L	LL	LM	ΦS*	ΦLB**	QK	Output W (hp)	Approximate Mass lb (kg)	Allowable Radial Load lb (N)	Allowable Thrust Load lb (N)
A3□□F2C	0.047 (1.2)	0.079 (2)		4.96 (126)	3.98 (101)	1.44 (36.5)	0.24 (6)	1.18 (30)	0.55 (14)	30 (0.04)	1.32 (0.6)	15 (68)	12 (54)
A3□□F4C				5.26 (133.5)	4.27 (108.5)	1.73 (44.0)				50 (0.07)			
A5□□F2C				6.3 (160)	5.31 (135)	2.42 (61.5)				100 (0.13)			
A5□□F4C				6.3 (160)	5.31 (135)	2.42 (61.5)				100 (0.13)			

<sup>†</sup>Some motor dimensions vary for motors with the optional shaft seal: See p.8 for details.

Specified Tolerances				
Dimension	*ΦS		**ΦLB	
Unit	Diameter	Tolerance	Diameter	Tolerance
in	0.2362	+0.0000-0.0003	1.181	+0.0000-0.0008
	0.3150	+0.0000-0.0004		
mm	6.000	+0.000-0.008	30.000	+0.000-0.021
	8.000	+0.000-0.009		

### Connector Specifications:

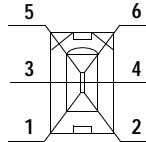
#### Motor Plug



Motor Connection		
1	Phase U	Red
2	Phase V	White
3	Phase W	Blue
4	FG (Frame Ground)	Green/Yellow
5	Brake Terminal	Red
6	Brake Terminal	Black

Plug: 350715-1 (AMP)  
 Pin: 350561-3 or 350690-3 (except No. 4)  
 Ground pin: : 770210-1 (No. 4)  
 Mating connector:  
 Cap: 350781-1  
 Socket: 350570-3 or 350689-3

#### Encoder Plug



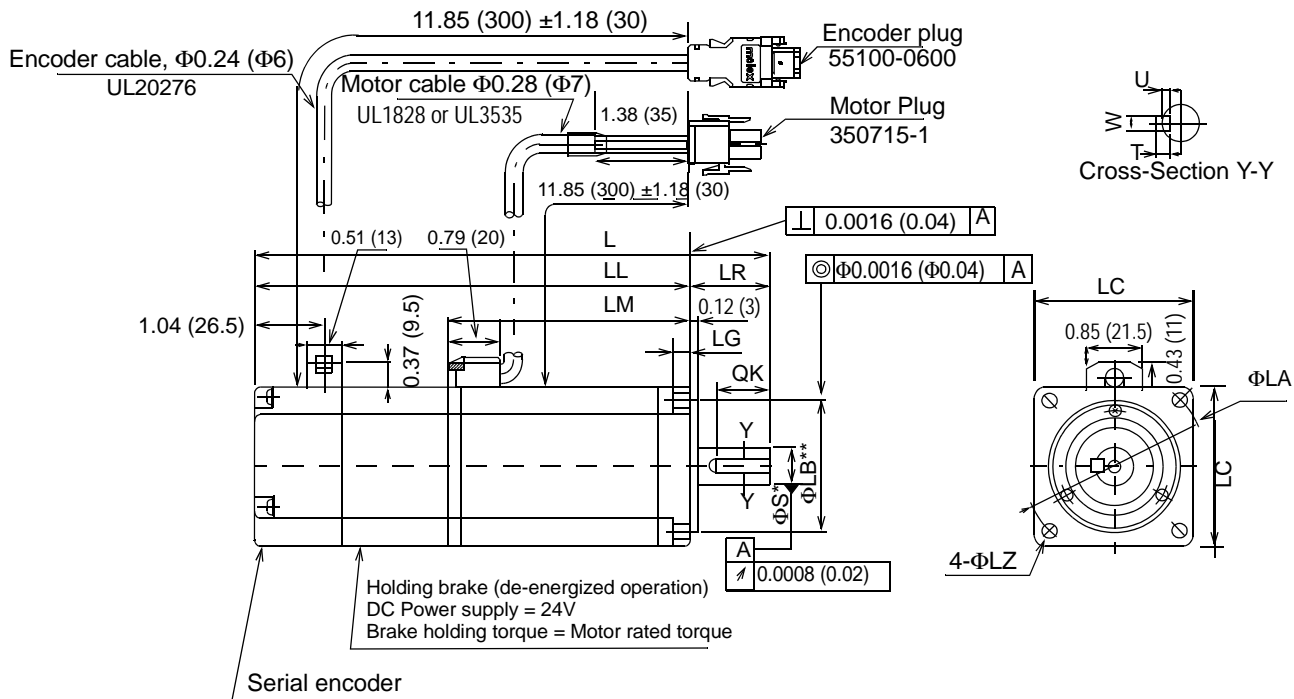
Encoder Connection		
1	PG 5V	Red
2	PG 0V	Black
3	Battery +	Orange
4	Battery -	White/Orange
5	Data +	Light Blue
6	Data -	White/Light Blue

Note: Pins number 3 and 4 are connectors used for 16-bit absolute encoder option only.

Plug: 55100-0600 (Molex)  
 Mating connector:  
 Socket: 54280-0600

# 100/200V Single-phase Sigma II Servo Systems

- 200W (0.27hp), 400W (0.53hp), 750W (1.01hp)



SGMAH Servomotors

Type SGMAH- <sup>†</sup>	U	W	T	L	LL	LM	LR	LG	LC	$\Phi LA$	$\Phi LZ$	$\Phi S^*$	$\Phi LB^{**}$	QK	Output W (hp)	Approximate Mass lb (kg)	Allowable Radial Load lb (N)	Allowable Thrust Load lb (N)
02□□F4C	0.12 (3)	0.2 (5)		6.54 (166)	5.35 (136)	2.46 (62.5)	1.18 (30)	0.24 (6)	2.36 (60)	2.76 (70)	0.22 (5.5)	0.55 (14)	1.97 (50)	0.79 (20)	200 (0.27)	3.53 (1.6)	55 (245)	17 (74)
04A□F4C				7.64 (194)	6.46 (164)	3.56 (90.5)									400 (0.53)	4.85 (2.2)		
08A□F4C				9.04 (229.5)	7.46 (189.5)	4.37 (111)	1.57 (40)	0.31 (8)	3.15 (80)	3.54 (90)	0.28 (7)	0.64 (16)	2.76 (70)	1.18 (30)	750 (1.01)	9.48 (4.3)	88 (392)	33 (147)

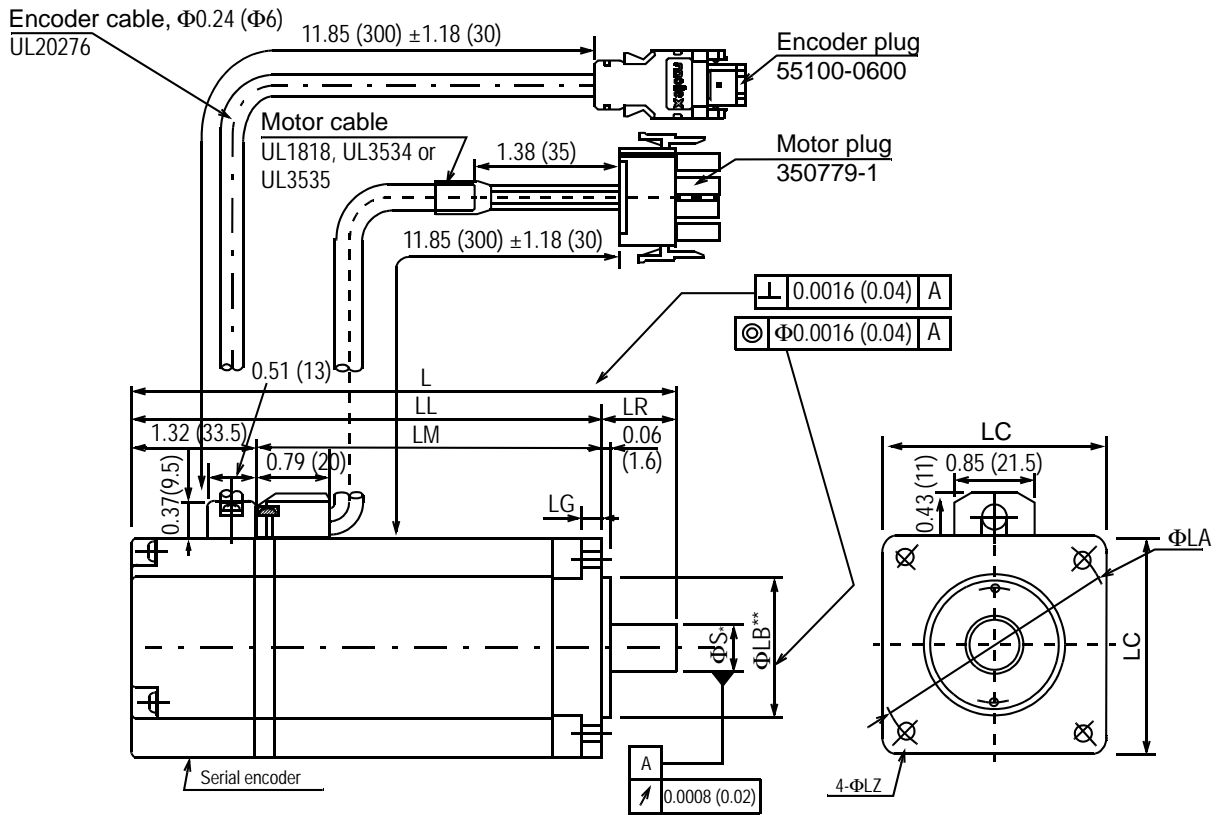
<sup>†</sup>Some motor dimensions vary for motors with the optional shaft seal: See p.9 for details.

Specified Tolerances				
Dimension	$^*\Phi S$		$^{**}\Phi LB$	
Unit	Diameter	Tolerance	Diameter	Tolerance
in	0.5512	+0.0000-0.0004	1.9685	+0 -0.0010
	0.6299	+0.0000-0.0004	2.7558	+0 -0.0012
mm	14.000	+0.000 -0.011	50.000	+0 -0.025
	16.000	+0.000 -0.011	70.00	+0 -0.03

# 100/200V Single-phase Sigma II Servo Systems

SGMAH Servomotors

- 200W (0.27hp), 400W (0.54hp) with NEMA 23\* Flange/Pilot



Type SGMAH-	L	LL	LM	LR	LG	LC	ΦLA	ΦLZ	ΦS*	ΦLB**	Output W (hp)	Approximate Mass lb (kg)	Allowable Radial Load lb (N)	Allowable Thrust Load lb (N)
02□AN21	4.67 (118.5)	3.9 (98.5)	2.56 (65)	0.79 (20)	0.24 (6)	2.36 (60)	2.63 (66.7)	0.18 (4.5)	0.50 (12.7)	1.5 (38.1)	200 (0.27)	2.43 (1.1)	55 (245)	17 (74)
04□AN21	5.77 (146.5)	5.0 (126.5)	3.66 (93)								400 (0.53)			

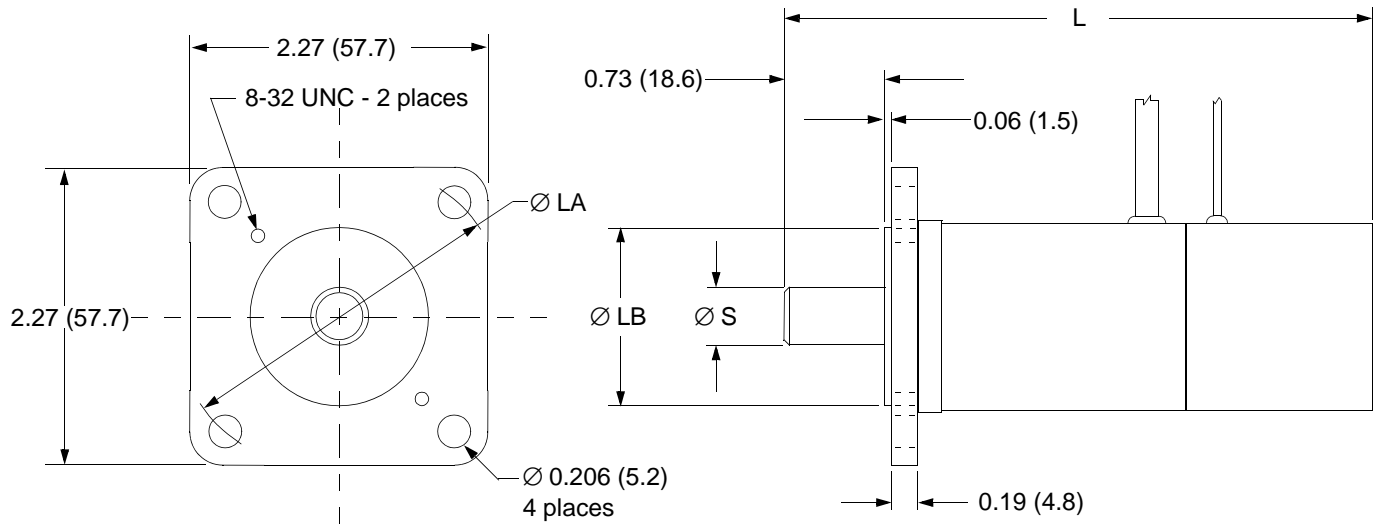
Specified Tolerances				
Dimension	*ΦS		**ΦLB	
Unit	Diameter	Tolerance	Diameter	Tolerance
in	0.5000	+0 -0.00043	1.5000	+0.0000 -0.00098
mm	12.7	+0 -0.011	38.1	+0.000 -0.025

\*For servo application torques: shaft diameter is 0.5in (12.7mm) rather than 0.25 (6.35mm), as is in typical NEMA 23.



# 100/200V Single-phase Sigma II Servo Systems

SGMAH  
Servomotors

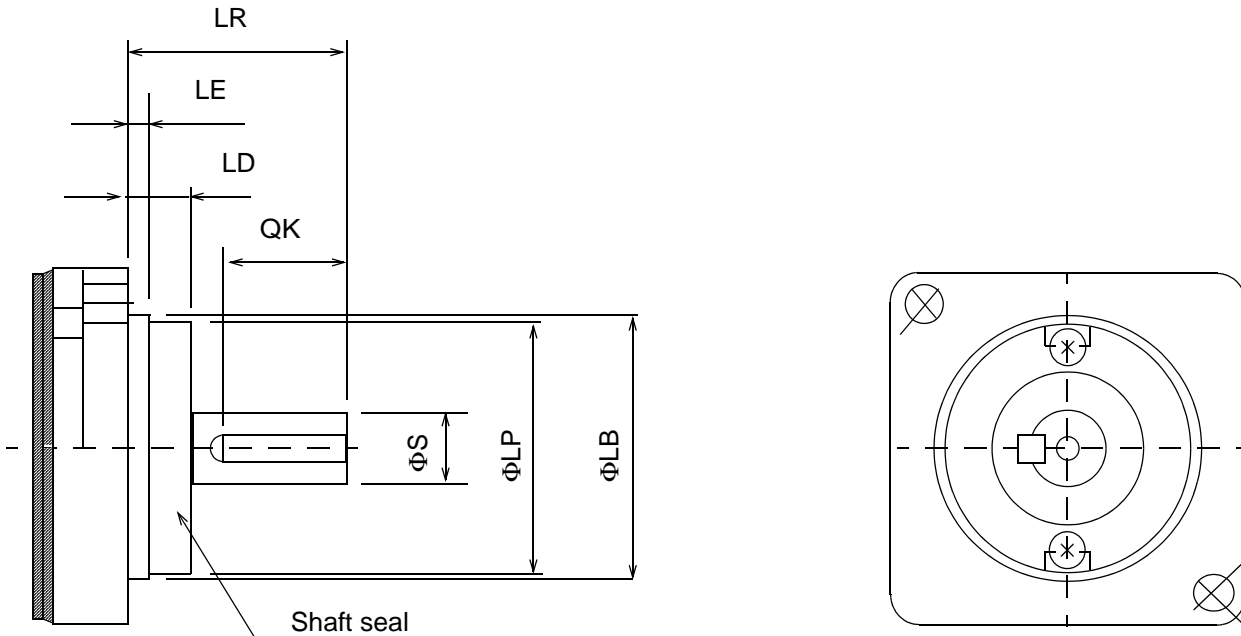


Motor type	*Dimensions - Inch (mm)			
	L	Ø S	Ø LB	Ø LA
SGMAH-A3 w/NEMA 23 Adaptor	3.72 (94.5)	0.2362 <sup>+0.000</sup> / <sup>-0.0003</sup> (6.0 <sup>+0.000</sup> / <sup>-0.006</sup> )	1.500 <sup>+0.002</sup> / <sup>-0.002</sup> (38.1 <sup>+0.05</sup> / <sup>-0.05</sup> )	2.625 (66.7)
SGMAH-A5 w/NEMA 23 Adaptor	4.02 (102)	0.2362 <sup>+0.000</sup> / <sup>-0.0003</sup> (6.0 <sup>+0.000</sup> / <sup>-0.006</sup> )	1.500 <sup>+0.002</sup> / <sup>-0.002</sup> (38.1 <sup>+0.05</sup> / <sup>-0.05</sup> )	2.625 (66.7)
SGMAH-01 w/NEMA 23 Adaptor	4.70 (119.5)	0.3150 <sup>+0.000</sup> / <sup>-0.0004</sup> (8.0 <sup>+0.000</sup> / <sup>-0.009</sup> )	1.500 <sup>+0.002</sup> / <sup>-0.002</sup> (38.1 <sup>+0.05</sup> / <sup>-0.05</sup> )	2.625 (66.7)

\*Dimensions include a field installed SGM-N23 adaptor flange on the listed motor.

## Dimension Modifications for Motors with Optional Shaft Seal

- 30W (0.04hp), 50W (0.07hp), 100W (0.13hp)



Type SGMAH-	QK	ΦLB*	ΦS*	LE	LR	LD	ΦLP
A3	0.55 (14)	1.18 (30)	0.236 (6)	0.10 (2.5)	0.98 (25)	0.30 (7.5)	1.14 (28)
A5			0.315 (8)				
01							

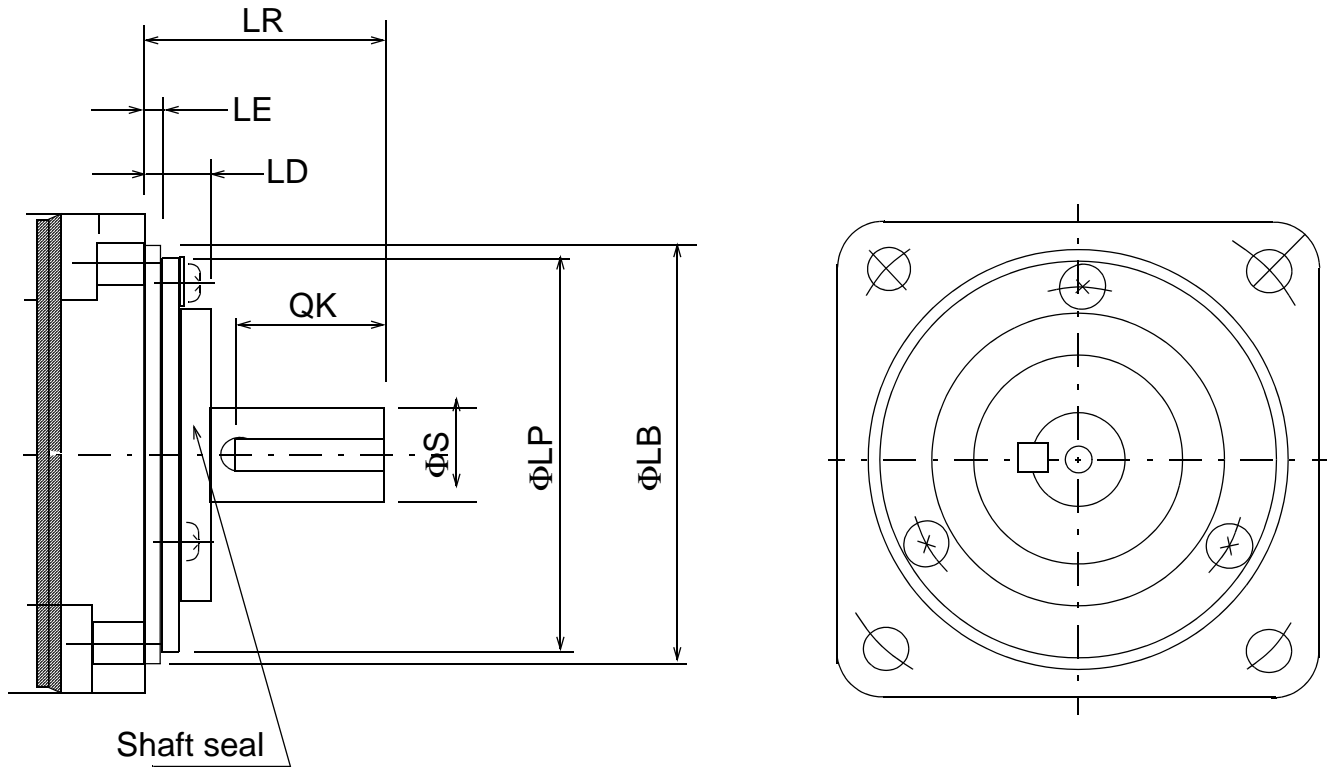
\*Tolerances for diameters LB and S are the same as those for motors without shaft seals.



# 100/200V Single-phase Sigma II Servo Systems

- 200W (0.27hp), 400W (0.53hp), 750W (1.01hp)

SGMAH Servomotors



Type SGMAH-	QK	φLB*	φS*	LE	LR	LD	φLP
02	0.55 (14)	1.97 (50)	0.55 (14)	0.12 (3)	1.18 (30)	0.39 (10)	1.89 (48)
04							
08	0.98 (25)	2.76 (70)	0.63 (16)		1.57 (40)	0.43 (11)	2.60 (66)

\*Tolerances for diameters LB and S are the same as those for motors without shaft seals.

## Torque Reduction Factor for SGMAH motors equipped with a shaft seal:

Servo Motor Model	A3	A5	01	02	04	08
Torque Reduction Factor	70%	80%	90%	90%	95%	95%

For example: The SGMAH-A3 continuous and peak torque rating should be reduced to 70% of the listed catalog specification.