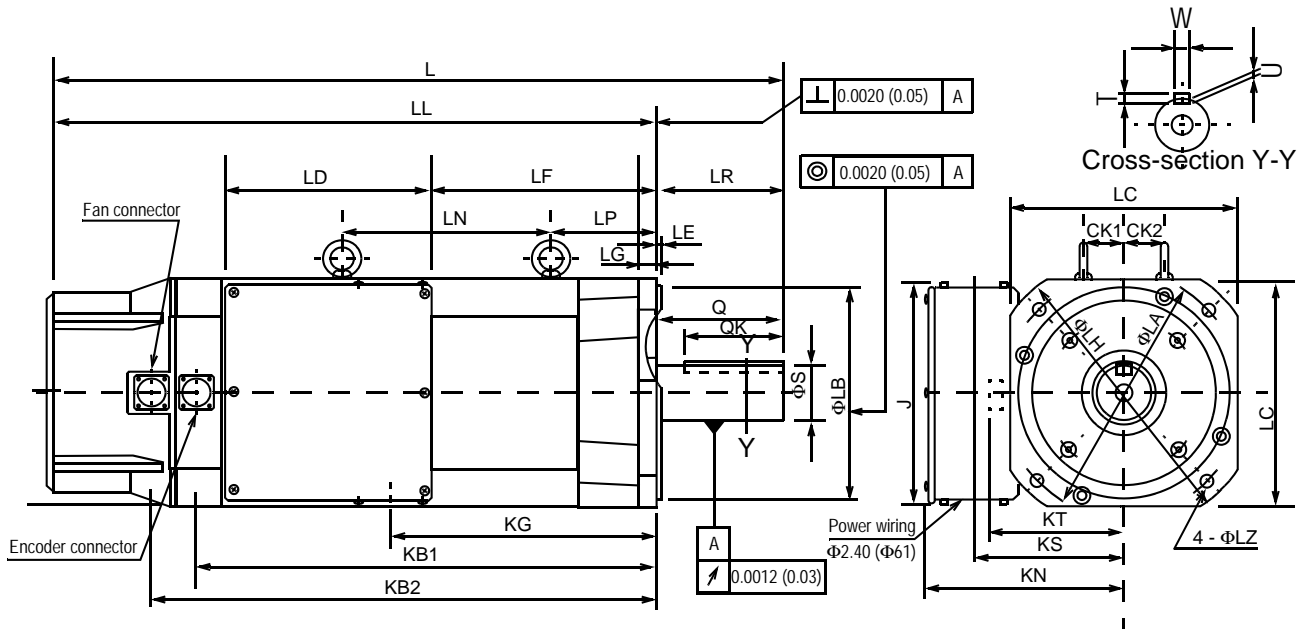


# 400V Large Capacity Sigma II Servo System

## Dimensions in inches (mm)

### (1) 17 Bit Incremental / Absolute Encoder



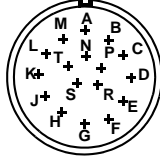
Type SGBMH	Motor Body Dimensions														Flange Dimensions				Shaft End Dimension										
	L	LL	LR	LD	LF	LN	LP	KB1	KB2	KG	KN	KS	KT	CK1	CK2	J	φLA	φLB**	LC	LE	LG	φLH	φLZ	φS*	Q	QK	W****	T***	U
2BD A61	29.13 (740)	23.62 (600)	5.51 (140)	9.06 (230)	6.97 (177)	6.30 (160)	4.57 (116)	17.17 (436)	19.06 (484)	8.82 (224)	8.66 (220)	6.42 (163)	5.87 (149)	1.77 (45)	1.77 (45)	9.84 (250)	10.43 (265)	9.06 (230)	9.84 (250)	0.20 (5)	0.79 (20)	11.81 (300)	0.53 (13.5)	2.36 (60)	5.51 (140)	4.33 (110)	0.71 (18)	0.43 (11)	0.28 (7)
3ZD A61	31.91 (810)	26.38 (670)			9.65 (245)	9.06 (230)		19.86 (504)	21.75 (552)	11.50 (292)																			

Type SGBMH-	Approximate Mass lb (kg)	Allowable Radial Load lb (N)	Allowable Thrust Load lb (N)
2BD A61	264.5 (120)	1323 (5880)	485 (2156)
3ZD A61	308.7 (140)	1410 (6272)	

Specified Tolerances									
Dimension	*φS		**φLB		***T		****W		
	Unit	Diameter	Tolerance	Diameter	Tolerance	Length	Tolerance	Length	Tolerance
	in	2.362	+0.00118 -0.00043	9.055	+0.0000 -0.00181	0.433	+0.0000 -0.00043	0.709	+0.0000 -0.00169
	mm	60	+0.030 -0.011	230	+0.000 -0.046	11	+0.000 -0.1103	18	+0.000 -0.043

Note: 1. Dimensions are the same when using either incremental or absolute encoders (with or without optional shaft seal).  
 2. Tolerances on the dimensions of flange type LB, of shaft extensions S, and of keyway width and depth are based on JIS (Japanese Industrial Standard) B0401 "Limits and Fits for Engineering."

#### Encoder Plug

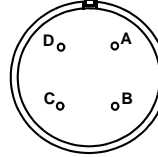


Connector Wiring on the Encoders			
A	—	K	—
B	—	L	—
C	Data +	M	—
D	Data -	N	—
E	—	P	—
F	—	R	—
G	0V	S	Battery - (Note*)
H	+5V <sub>dc</sub>	T	Battery + (Note*)
J	FG (Frame Ground)		

\*Note: Used with an absolute encoder only.

Non-Environmental Mating Connector:  
 MS3108B20-29S (L Type)  
 MS3106B20-29S (Straight Type)  
 Cable Clamp: MS3057-12A

#### Fan Connector



Fan Connector	
A	U Phase
B	V Phase
C	W Phase
D	—

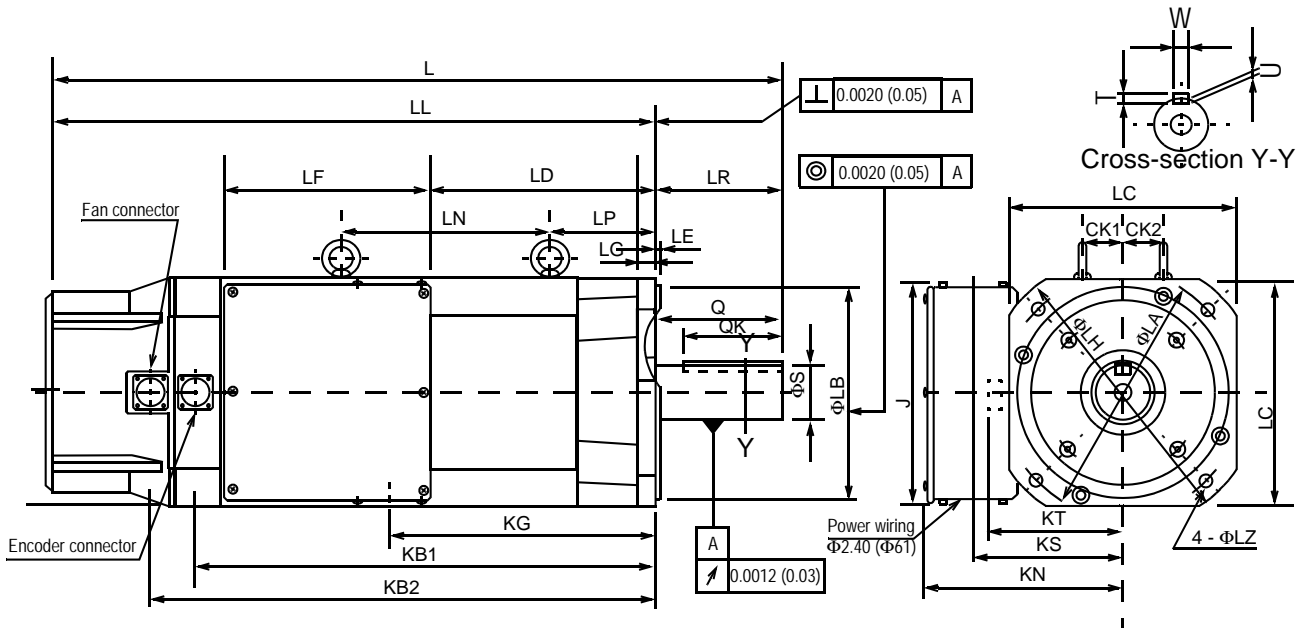
Receptacle: CE05-2A18-10PD-B  
 Non-environmental mating connector:  
 MS3108B18-10S (L-Type)  
 Cable Clamp: MS3057-10A

#### Power Wiring Terminal Box

Terminal	Connection	Screw Size
U, V, W	Motor	M10
⊕	Ground	

# 400V Large Capacity Sigma II Servo System

## (2) 17 Bit Incremental/Absolute Encoder, with Brake

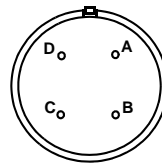


Type SGMBH-	Motor Body Dimensions														Flange Dimensions					Shaft End Dimension									
	L	LL	LR	LD	LF	LN	LP	KB1	KB2	KG	KN	KS	KT	CK1	CK2	J	ΦLA	ΦLB**	LC	LE	LG	ΦLH	ΦLZ	ΦS*	Q	QK	W****	T***	U
2BD A6C	33.86 (860)	28.35 (720)	5.51 (140)	6.97 (177)	9.06 (230)	15.47 (393)	4.57 (116)	21.89 (556)	23.78 (604)	8.82 (224)	8.66 (220)	6.42 (163)	5.87 (149)	1.77 (45)	0.98 (25)	9.84 (250)	10.43 (265)	9.06 (230)	9.84 (250)	0.20 (5)	0.79 (20)	11.81 (300)	0.53 (13.5)	2.36 (60)	5.51 (140)	4.33 (110)	0.71 (18)	0.43 (11)	0.28 (7)
3ZD A6C	36.64 (930)	31.13 (790)		9.65 (245)		18.16 (461)		24.57 (624)	26.46 (672)	11.5 (292)																			

Type SGMBH-	Approximate Mass lb (kg)	Allowable Radial Load lb (N)	Allowable Thrust Load lb (N)	Specified Tolerances										
				*ΦS		**ΦLB		***T		****W				
Dimension	Unit	Diameter	Tolerance	Diameter	Tolerance	Length	Tolerance	Length	Tolerance					
2BD A6C	331 (150)	1323 (5880)	485 (2156)	in	2.362	+0.00118 -0.00043	9.055	+0.0000 -0.00181	0.433	+0.0000 -0.00043	0.709	+0.0000 -0.00169		
3ZAD A6C	375 (170)	1410 (6272)		mm	60	+0.030 -0.011	230	+0.000 -0.046	11	+0.000 -0.1103	18	+0.000 -0.043		

- Note:
- Dimensions are the same when using either incremental or absolute encoders (with or without optional shaft seal).
  - Tolerances on the dimensions of flange type LB, of shaft extensions S, and of keyway width and depth are based on JIS (Japanese Industrial Standard) B0401 "Limits and Fits for Engineering."

Power Wiring Terminal Box		
Terminal	Connection	Screw Size
U, V, W	Motor	M10
	Ground	
A, B	Brake	M4

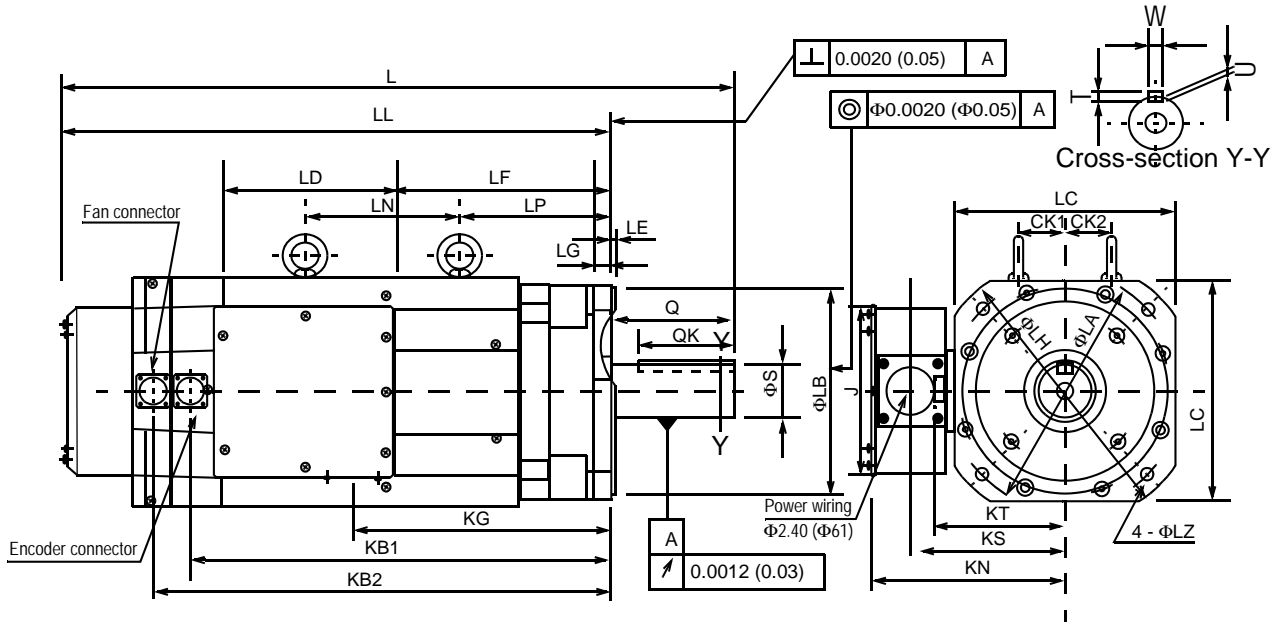


Fan Connector	
A	U Phase
B	V Phase
C	W Phase
D	Ground Terminal

Receptacle: CE05-2A18-10PD-B  
 Non-environmental mating connector:  
 MS3108B18-10S (L-Type)  
 Cable Clamp: MS3057-10A

# 400V Large Capacity Sigma II Servo System

## (3) 17 Bit Incremental/Absolute Encoder



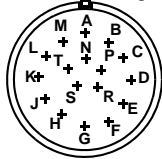
Type SGMBH-	Motor Body Dimensions															Flange Dimensions					Shaft End Dimension							
	L	LL	LD	LF	LN	LP	KB1	KB2	KG	KN	KS	KT	CK1	CK2	J	φLA	φLB**	LC	LE	LG	φLH	φLZ	φS*	Q	QK	W***	T***	U
3GD A61	32.0 (814)	26.5 (674)	9.29 (236)	9.45 (240)	5.91 (150)	7.87 (200)	20.1 (510)	22.0 (558)	11.6 (295)	8.66 (220)	7.91 (201)	6.85 (174)	2.36 (60)	2.36 (60)	8.66 (220)	11.8 (300)	9.84 (250)	11.8 (300)	0.20 (5)	1.38 (35)	13.8 (350)	0.69 (17.5)	2.76 (70)	5.51 (140)	4.33 (110)	0.79 (20)	0.47 (12)	0.29 (7.5)
4ED A61	33.7 (855)	28.1 (715)		11.1 (281)	7.87 (200)	21.7 (551)	23.6 (599)	13.2 (336)																				

Type SGMBH-	Approximate Mass lb (kg)	Allowable Radial Load lb (N)	Allowable Thrust Load lb (N)
3GD A61	507.1 (230)	1674 (7448)	485 (2156)
4ED A61	551.1 (250)	1762 (7840)	

Dimension	Specified Tolerances								
	*φS		**φLB		***T		****W		
	Unit	Diameter	Tolerance	Diameter	Tolerance	Length	Tolerance	Length	Tolerance
in	2.76	+0.0012	-0.004	9.84	+0.0000 -0.0018	0.47	+0.0000 -0.00433	0.79	+0.0000 -0.00204
mm	70	+0.030	+0.011	250	+0.000 -0.046	12	+0.000 -0.110	20	+0.000 -0.052

- Note:
- Dimensions are the same when using either incremental or absolute encoders (with or without optional shaft seal).
  - Tolerances on the dimensions of flange type LB, of shaft extensions S, and of keyway width and depth are based on JIS (Japanese Industrial Standard) B0401 "Limits and Fits for Engineering."

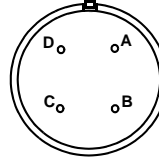
### Encoder Plug



Connector Wiring on the Encoders			
A	—	K	—
B	—	L	—
C	Data +	M	—
D	Data -	N	—
E	—	P	—
F	—	R	—
G	0V	S	Battery - (Note*)
H	+5V <sub>dc</sub>	T	Battery + (Note*)
J	FG (Frame Ground)		

\*Note: Used with an absolute encoder only.  
 Non-Environmental Mating Connector:  
 MS3108B20-29S (L Type)  
 MS3106B20-29S (Straight Type)  
 Cable Clamp: MS3057-12A

### Fan Connector



Fan Connector	
A	U Phase
B	V Phase
C	W Phase
D	—

Receptacle: CE05-2A18-10PD-B

Non-environmental mating connector:

MS3108B18-10S (L-Type)

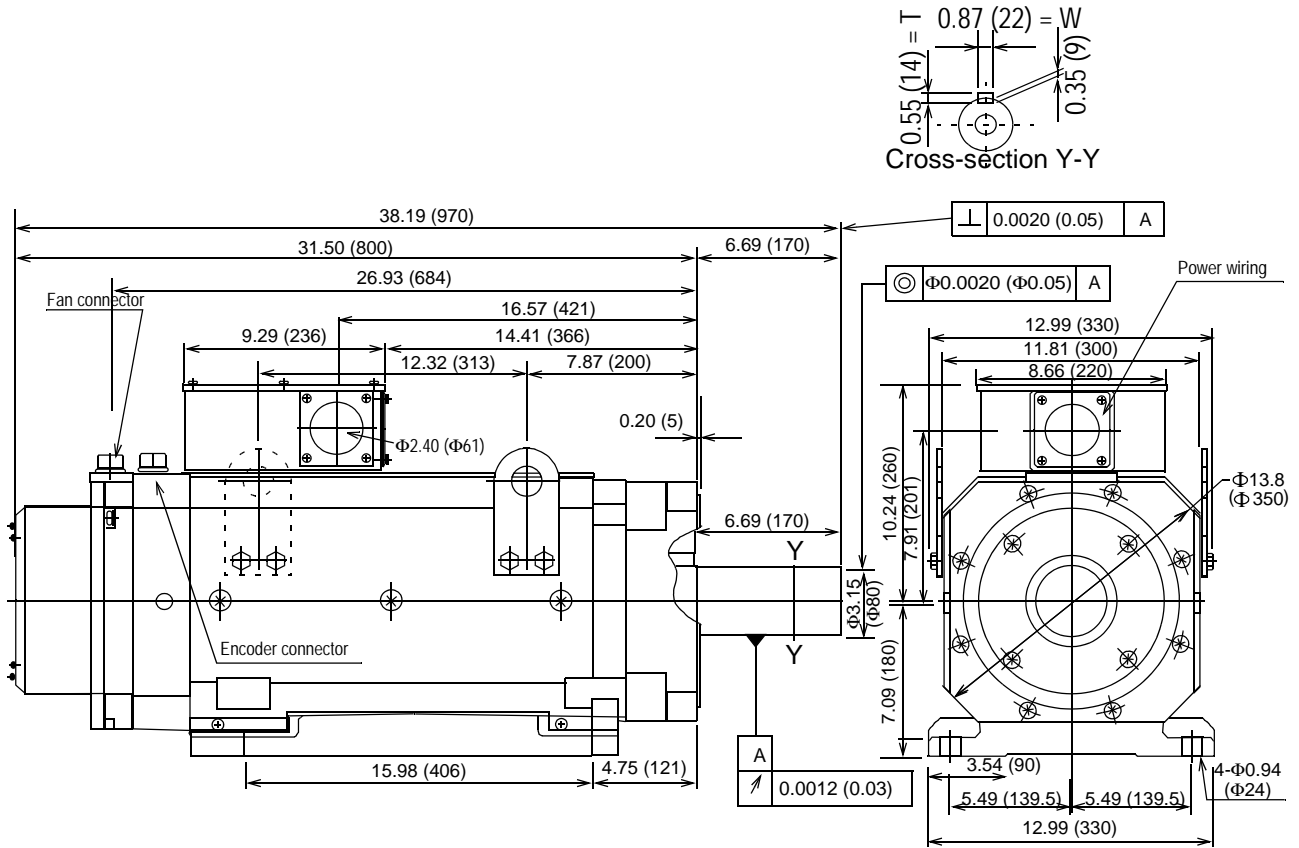
Cable Clamp: MS3057-10A

### Power Wiring Terminal Box

Terminal	Connection	Screw Size
U, V, W	Motor	M10
	Ground	

# 400V Large Capacity Sigma II Servo System

## (4) 17 Bit Incremental/Absolute Encoder



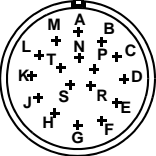
Type SGBMH	Approximate Mass lb (kg)	Allowable Radial Load lb (N)	Allowable Thrust Load lb (N)
5ED AL1	772 (350)	1895 (8428)	485 (2156)

- Note:
- Dimensions are the same when using either incremental or absolute encoders (with or without optional shaft seal).
  - Tolerances on the dimensions of flange type LB, of shaft extensions S, and of keyway width and depth are based on JIS (Japanese Industrial Standard) B0401 "Limits and Fits for Engineering."

Dimension	Specified Tolerances				
	Unit	*T	*W		
	in	0.55	+0.0000 -0.00433	0.87	+0.0000 -0.00204
	mm	14	+0.000 -0.110	22	+0.000 -0.052

SGBMH Servomotor

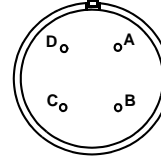
Encoder Plug



Connector Wiring on the Encoders			
A	—	K	—
B	—	L	—
C	Data +	M	—
D	Data -	N	—
E	—	P	—
F	—	R	—
G	0V	S	Battery - (Note*)
H	+5V <sub>dc</sub>	T	Battery + (Note*)
J	FG (Frame Ground)		

\*Note: Used with an absolute encoder only.  
Non-Environmental Mating Connector:  
MS3108B20-29S (L Type)  
MS3106B20-29S (Straight Type)  
Cable Clamp: MS3057-12A

Fan Connector



Fan Connector	
A	U Phase
B	V Phase
C	W Phase
D	—

Receptacle: CE05-2A18-10PD-B  
Non-environmental mating connector:  
MS3108B18-10S (L-Type)  
CableClamp: MS3057-10A

Power Wiring Terminal Box		
Terminal	Connection	Screw Size
U, V, W	Motor	M10
	Ground	