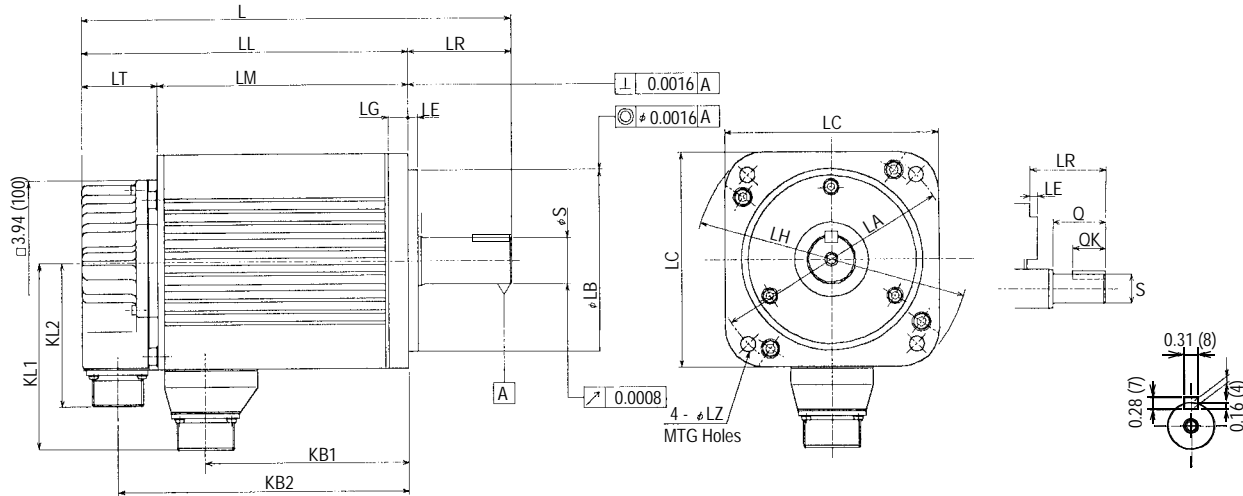


Dimensions in inches (mm)

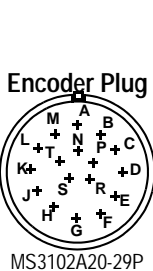
(1) 17-bit Incremental or Absolute Encoder



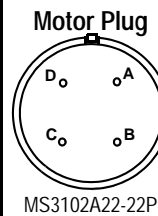
Type SGM5H-	L	LL	LM	LR	LT	KB1	KB2	KL1	KL2	Flange Dimensions				Shaft End Dimension			Approximate Mass lb _f (kg)	Allowable Radial Load lb _f (N)	Allowable Thrust Load lb _f (N)			
										ΦLA	ΦLB	LC	LE	LG	ΦLH	ΦLZ				ΦS	Q	OK
10A□A61	7.64 (194)	5.87 (149)	4.06 (103)	1.77 (45)	1.81 (46)	2.99 (76)	5.04 (128)	3.78 (96)	3.43 (87)	4.53 (115)	3.74 (95)	3.94 (100)	0.12 (3)	0.39 (10)	5.12 (130)	0.28 (7)	0.94 (24)	1.57 (40)	1.26 (32)	10.1 (4.6)	154 (686)	44 (196)
15A□A61	8.66 (220)	6.89 (175)	5.08 (129)			4.92 (125)	6.97 (177)			4.53 (115)	3.74 (95)	3.94 (100)	0.12 (3)	0.39 (10)	5.12 (130)	0.28 (7)	0.94 (24)	1.57 (40)	1.26 (32)	10.1 (4.6)		
20A□A61	9.57 (243)	7.8 (198)	5.98 (152)	1.77 (45)	1.81 (46)	4.92 (125)	6.97 (177)	3.78 (96)	3.43 (87)	4.53 (115)	3.74 (95)	3.94 (100)	0.12 (3)	0.39 (10)	5.12 (130)	0.28 (7)	0.94 (24)	1.57 (40)	1.26 (32)	15.4 (7.0)	220 (980)	88 (392)
30A□A61	10.31 (262)	7.83 (199)	6.02 (153)			4.8 (122)	7.01 (178)			4.53 (115)	3.74 (95)	3.94 (100)	0.12 (3)	0.39 (10)	5.12 (130)	0.28 (7)	0.94 (24)	1.57 (40)	1.26 (32)	15.4 (7.0)		
40A□A61	11.77 (299)	9.29 (236)	7.48 (190)	2.48 (63)	1.81 (46)	6.26 (159)	8.46 (215)	4.49 (114)	3.43 (87)	5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	30.9 (14)	265 (1176)	88 (392)
50A□A61	13.35 (339)	10.87 (276)	9.06 (230)			7.83 (199)	10.04 (255)			5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	30.9 (14)		

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 and shaft extensions S are based on JIS (Japanese Industrial Standard) B0401 "Limits and Fits for Engineering."

Specified Tolerances				
Dimension	*ΦS		**ΦLB	
Unit	Diameter	Tolerance	Diameter	Tolerance
in	0.9449, 1.1024	+0.0000-0.0005	3.7402, 4.3307	+0.0000 -0.0014
mm	24.000, 28.000	+0.000 -0.013	95.000, 110.000	+0.000 -0.035



Connector Wiring on the Incremental Encoders			
A	—	K	—
B	—	L	—
C	Data +	M	—
D	Data -	N	—
E	—	P	—
F	—	R	—
G	0V	S	Battery - (Note*)
H	+5V _{dc}	T	Battery + (Note*)
J	FG (Frame Ground)		*Note: Used with an absolute encoder only.

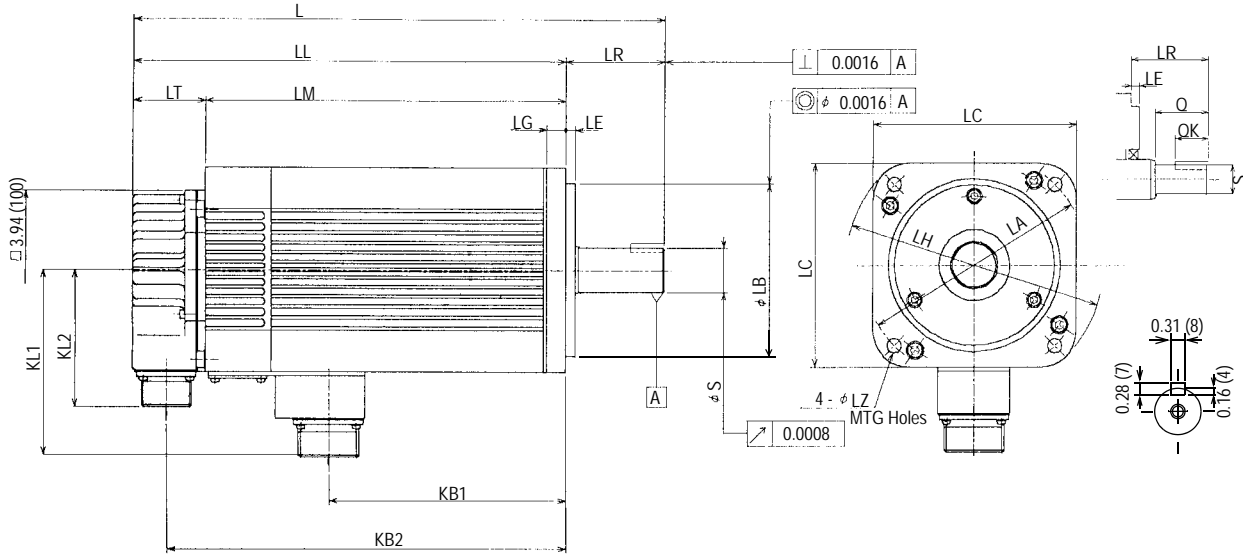


Connector Wiring on the Motor Side	
A	U Phase
B	V Phase
C	W Phase
D	Ground Terminal

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

200V Three-phase Sigma II Servo Systems

(2) 17-bit Incremental or Absolute Encoder, with Brake

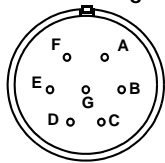


Type SGMSH-	L	LL	LM	LR	LT	KB1	KB2	KL1	KL2	Flange Dimensions						Shaft End Dimension			Approximate Mass lb _f (kg)	Allowable Radial Load lb _f (N)	Allowable Thrust Load lb _f (N)			
										ΦLA	ΦLB	LC	LE	LG	ΦLH	ΦLZ	ΦS	Q				QK		
10A□A6C	9.37 (238)	7.6 (193)	5.79 (147)	1.77 (45)	1.81 (46)	2.64 (67)	6.77 (172)	3.94 (100)	3.43 (87)	4.53 (115)	3.74 (95)	3.94 (100)	0.12 (3)	0.39 (10)	5.12 (130)	0.28 (7)	0.94 (24)	1.57 (40)	1.26 (32)	13.2 (6.0)	154 (686)	44 (196)		
15A□A6C	10.39 (264)	8.62 (219)	6.81 (173)	1.77 (45)		3.66 (93)	7.8 (198)			4.57 (116)	8.7 (221)	5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)			1.96 (50)	16.5 (7.5)
20A□A6C	11.3 (287)	9.53 (242)	7.72 (196)	1.77 (45)		4.45 (113)	8.5 (216)			5.91 (150)	9.96 (253)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)			18.7 (8.5)	
30A□A6C	11.81 (300)	9.33 (237)	7.52 (191)	2.48 (63)		4.45 (113)	8.5 (216)	5.91 (150)		9.96 (253)	4.69 (119)	5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	30.9 (14)	220 (980)	88 (392)
40A□A6C	14.84 (377)	10.79 (274)	8.98 (228)	2.48 (63)		7.48 (190)	11.54 (293)	5.91 (150)		9.96 (253)	4.69 (119)	5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	37.5 (17)	265 (1176)	
50A□A6C	12.36 (314)	10.55 (268)	7.48 (190)	2.48 (63)	7.48 (190)	11.54 (293)	5.91 (150)	9.96 (253)	4.69 (119)	5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	44.1 (20)				

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 and of shaft extensions S are based on JIS (Japanese Industrial Standard) B0401 "Limits and Fits for Engineering."

Specified Tolerances					
Dimension	*ΦS		**ΦLB		
	Unit	Diameter	Tolerance	Diameter	Tolerance
in	0.9449, 1.1024		+0.0000-0.0005	3.7402, 4.3307	+0.0000 -0.0014
mm	24.000, 28.000		+0.000 -0.013	95.000, 110.000	+0.000 -0.035

Motor Plug



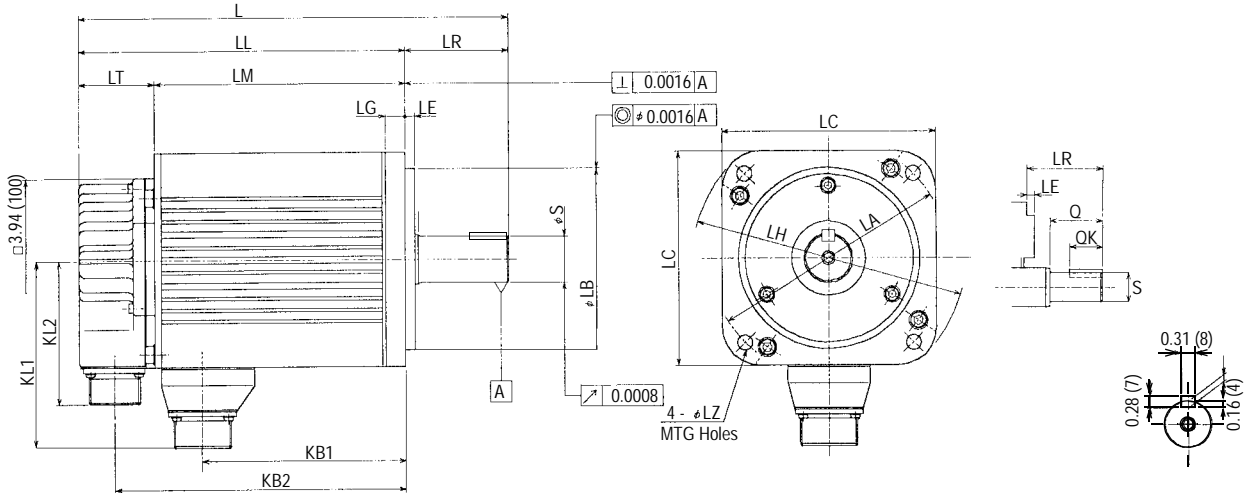
MS3102A20-15P

Connector Wiring on the Motor Side			
A	U Phase	E	Brake Terminal
B	V Phase	F	Brake Terminal
C	W Phase	G	—
D	FG (Frame Ground)		

SGMSH Servomotors

SGMSH Dimensions in inches (mm)

(1) 17-bit Incremental or Absolute Encoder



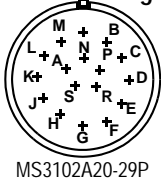
SGMSH Servomotors

Type SGMSH-	L	LL	LM	LR	LT	KB1	KB2	KL1	KL2	Flange Dimensions						Shaft End Dimension			Approximate Mass lb _f (kg)	Allowable Radial Load lb _f (N)	Allowable Thrust Load lb _f (N)			
										ΦLA	ΦLB**	LC	LE	LG	ΦLH	ΦLZ	ΦS*	Q				QK		
10D□A61	7.64 (194)	5.87 (149)	4.06 (103)	1.77 (45)	1.81 (46)	2.99 (76)	5.04 (128)	3.78 (96)	3.43 (87)	4.53 (115)	3.74 (95)	3.94 (100)	0.12 (3)	0.39 (10)	5.12 (130)	0.28 (7)	0.94 (24)	1.57 (40)	1.26 (32)	10.1 (4.6)	154 (686)	44 (196)		
15D□A61	8.66 (220)	6.89 (175)	5.08 (129)			4.02 (102)	6.06 (154)			4.92 (125)	6.97 (177)	5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)			1.96 (50)	12.8 (5.8)
20D□A61	9.57 (243)	7.8 (198)	5.98 (152)			4.92 (125)	6.97 (177)			5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	15.4 (7.0)				
30D□A61	10.31 (262)	7.83 (199)	6.02 (153)			6.26 (159)	8.46 (215)			4.49 (114)	3.43 (87)	5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	24.3 (11)	220 (980)	88 (392)
40D□A61	11.77 (299)	9.29 (236)	7.48 (190)			7.83 (199)	10.04 (255)			3.43 (87)	5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	30.9 (14)	265 (1176)		
50D□A61	13.35 (339)	10.87 (276)	9.06 (230)			7.83 (199)	10.04 (255)			3.43 (87)	5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	37.5 (17)			

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 and shaft extensions S are based on JIS (Japanese Industrial Standard) B0401 "Limits and Fits for Engineering."

Specified Tolerances				
Dimension	*ΦS		**ΦLB	
Unit	Diameter	Tolerance	Diameter	Tolerance
in	0.9449, 1.1024	+0.0000-0.0005	3.7402, 4.3307	+0.0000 -0.0014
mm	24.000, 28.000	+0.000 -0.013	95.000, 110.000	+0.000 -0.035

Encoder Plug



MS3102A20-29P

Connector Wiring on the Incremental Encoders

A	—	K	—
B	—	L	—
C	Data +	M	—
D	Data -	N	—
E	—	P	—
F	—	R	—
G	0V	S	Battery - (Note*)
H	+5V _{dc}	T	Battery + (Note*)
J	FG (Frame Ground)	*Note: Used with an absolute encoder only.	

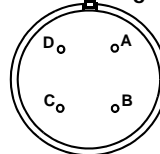
Non-Environmental Mating Connector:

MS3108B20-29S (L Type)

MS3106B20-29S (Straight Type)

Cable Clamp: MS3057-12A

Motor Plug

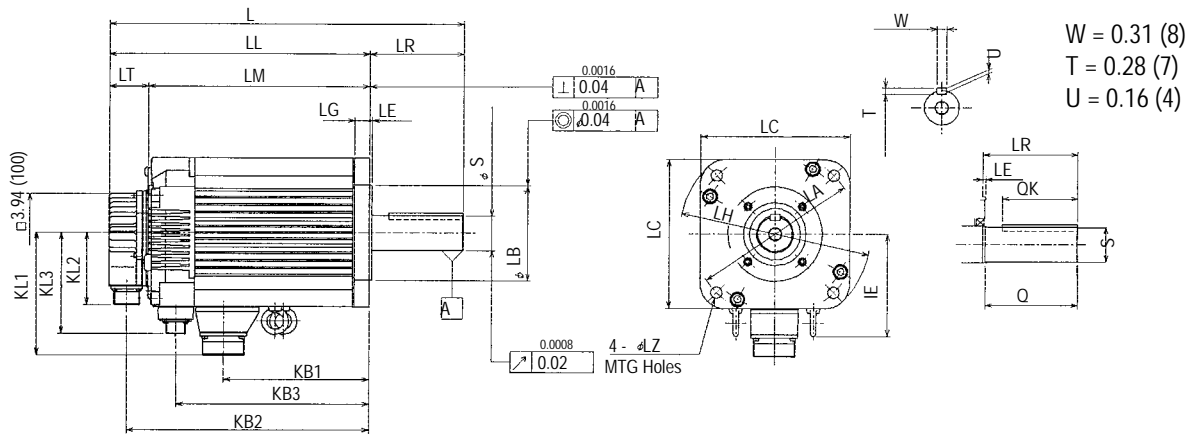


Connector Wiring on the Motor Side

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

400V Three-phase Sigma II Servo Systems

(2) 17-bit Incremental or Absolute Encoder, with Brake



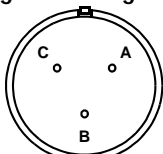
W = 0.31 (8)
T = 0.28 (7)
U = 0.16 (4)

Type SGMSH-	L	LL	LM	LR	LT	KB1	KB2	KB3	KL1	KL2	KL3	Flange Dimensions						Shaft End Dimension			Approximate Mass lb _r (kg)	Allowable Radial Load lb _r (N)	Allowable Thrust Load lb _r (N)													
												φLA	φLB**	LC	LE	LG	φLH	φLZ	φS*	Q				QK												
10D□A6C	9.37 (238)	7.6 (193)	5.79 (147)	1.77 (45)	1.81 (46)	2.99 (76)	6.77 (172)	4.72 (120)	378 (96)	3.35 (85)	4.53 (115)	3.74 (95)	3.94 (100)	0.12 (3)	0.39 (10)	5.12 (130)	0.28 (7)	0.94 (24)	1.57 (40)	1.26 (32)	13.2 (6.0)	154 (686)	44 (196)													
15D□A6C	10.39 (264)	8.62 (219)	6.81 (173)	1.77 (45)		4.02 (102)	7.80 (198)	5.75 (146)													3.86 (98)			5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	16.5 (7.5)		
20D□A6C	11.3 (287)	9.53 (242)	7.72 (196)	1.77 (45)		4.92 (125)	8.7 (221)	6.65 (169)													3.46 (88)			5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	18.7 (8.5)		
30D□A6C	11.81 (300)	9.33 (237)	7.52 (191)	2.48 (63)		4.80 (122)	8.50 (216)	6.69 (170)													4.49 (114)			5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	30.9 (14)	220 (980)	88 (392)
40D□A6C	13.27 (337)	10.79 (274)	8.98 (228)	2.48 (63)		—	—	—													—			5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	37.5 (17)	265 (1176)	
50D□A6C	13.27 (337)	12.36 (314)	10.55 (268)	2.48 (63)	—	—	—	—	5.71 (145)	4.33 (110)	5.12 (130)	0.24 (6)	0.47 (12)	6.5 (165)	0.35 (9)	1.1 (28)	2.17 (55)	1.96 (50)	44.1 (20)																	

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 and of shaft extensions S are based on JIS (Japanese Industrial Standard) B0401 "Limits and Fits for Engineering."

Specified Tolerances				
Dimension	*φS		**φLB	
	Unit	Diameter	Tolerance	Diameter
in	0.9449, 1.1024	+0.0000-0.0005	3.7402, 4.3307	+0.0000 -0.0014
mm	24.000, 28.000	+0.000 -0.013	95.000, 110.000	+0.000 -0.035

Plug for Holding Brake



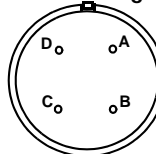
MS3102A10SL-3P

Connector Wiring on the Brake, Motor Side

A	Brake Terminal
B	Brake Terminal
C	—

Non-Environmental Mating Connector:
MS3108A10SL-3S (L Type)
MS3106A10SL-3S (Straight Type)
Cable Clamp: MS3057-4A

Motor Plug

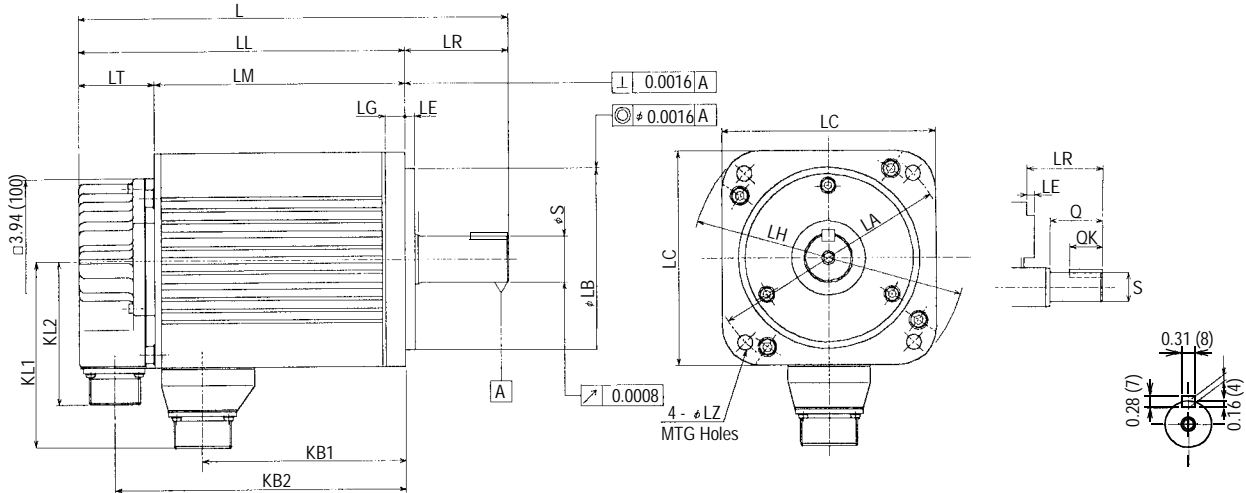


Connector Wiring on the Motor Side

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

SGMUH Dimensions in inches (mm)

(1) 17-bit Incremental or Absolute Encoder



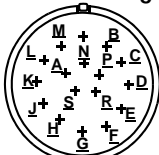
SGMUH Servomotors

Type SGMUH-	L	LL	LM	LR	LT	KB1	KB2	KL1	KL2	Flange Dimensions						Shaft End Dimension			Approximate Mass lb _f (kg)	Allowable Radial Load lb _f (N)	Allowable Thrust Load lb _f (N)	
										φLA	φLB**	LC	LE	LG	φLH	φLZ	φS*	Q				QK
10D□A61	7.64 (194)	5.87 (149)	4.06 (103)	1.77 (45)	1.81 (46)	2.99 (76)	5.04 (128)	3.78 (96)	3.46 (88)	5.12 (130)	4.33 (110)	4.57 (116)	0.14 (3.5)	0.39 (10)	5.91 (150)	0.35 (9)	0.94 (24)	1.57 (40)	1.26 (32)	10.1 (4.6)	110 (490)	22 (98)
15D□A61	8.66 (220)	6.89 (175)	5.08 (129)			4.02 (102)	6.06 (154)													12.8 (5.8)		
30D□A61	10.31 (262)	7.95 (202)	6.14 (156)	2.36 (60)		5.00 (127)	7.13 (181)	4.49 (114)		6.50 (165)	5.12 (130)	6.10 (155)		0.47 (12)	7.48 (190)	0.43 (11)	1.1 (28)	2.17 (55)	1.96 (50)	24.3 (11)	154 (686)	44.1 (196)

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 and shaft extensions S are based on JIS (Japanese Industrial Standard) B0401 "Limits and Fits for Engineering."

Specified Tolerances				
Dimension	*φS		**φLB	
Unit	Diameter	Tolerance	Diameter	Tolerance
in	0.9449, 1.1024	+0.0000-0.0005	4.3307	+0.0005 -0.00035
			5.12	+0.00055 -0.00043
mm	24.000, 28.000	+0.000 -0.013	110.000	+0.013 -0.009
			130	+0.014 -0.011

Encoder Plug

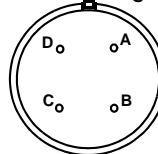


MS3102A20-29P

Connector Wiring on the Incremental Encoders			
A	—	K	—
B	—	L	—
C	Data +	M	—
D	Data -	N	—
E	—	P	—
F	—	R	—
G	0V	S	Battery - (Note*)
H	+5V _{dc}	T	Battery + (Note*)
J	FG (Frame Ground)		*Note: Used with an absolute encoder only.

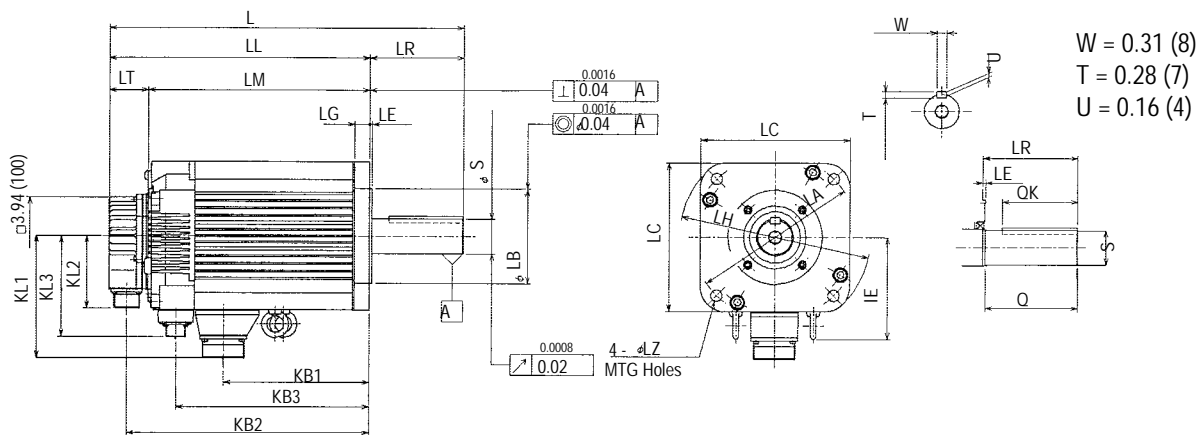
Non-Environmental Mating Connector:
MS3108B20-29S (L Type)
MS3106B20-29S (Straight Type)
Cable Clamp: MS3057-12A

Motor Plug



Connector Wiring on the Motor Side	
A	U Phase
B	V Phase
C	W Phase
D	Ground Terminal

(2) 17-bit Incremental or Absolute Encoder, with Brake



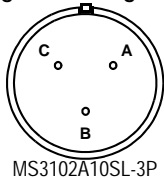
SGMUH
Servomotors

Type SGMUH-	L	LL	LM	LR	LT	KB1	KB2	KB3	KL1	KL2	KL3	Flange Dimensions						Shaft End Dimension			Approximate Mass lb _f (kg)	Allowable Radial Load lb _f (N)	Allowable Thrust Load lb _f (N)			
												ΦLA	ΦLB**	LC	LE	LG	ΦLH	ΦLZ	ΦS*	Q				OK		
10D□A6C	9.37 (238)	7.6 (193)	5.79 (147)	1.77 (45)	1.81 (46)	2.99 (76)	6.77 (172)	4.72 (120)	3.78 (96)	3.46 (88)	3.35 (85)	5.12 (130)	4.33 (110)	4.57 (116)	0.14 (3.5)	0.39 (10)	5.91 (150)	0.35 (9)	0.94 (24)	1.57 (40)	1.26 (32)	13.2 (6.0)	110 (490)	22 (98)		
15D□A6C	10.39 (264)	8.62 (219)	6.81 (173)			4.02 (102)	7.80 (198)	5.75 (146)				3.86 (98)	6.50 (165)	5.12 (130)	6.10 (155)	0.24 (6)	0.47 (12)	7.48 (190)	0.43 (11)	1.1 (28)	2.17 (55)				1.96 (50)	30.9 (14)
30D□A6C	11.81 (300)	9.33 (237)	7.52 (191)			4.80 (122)	8.50 (216)	6.69 (170)				4.49 (114)	6.50 (165)	5.12 (130)	6.10 (155)	0.24 (6)	0.47 (12)	7.48 (190)	0.43 (11)	1.1 (28)	2.17 (55)				1.96 (50)	

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 and of shaft extensions S are based on JIS (Japanese Industrial Standard) B0401 "Limits and Fits for Engineering."

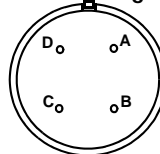
Specified Tolerances				
Dimension	*ΦS		**ΦLB	
Unit	Diameter	Tolerance	Diameter	Tolerance
in	0.9449, 1.1024	+0.0000-0.0005	4.3307	+0.0005 -0.00035
			5.12	+0.00055 -0.00043
mm	24.000, 28.000	+0.000 -0.013	110.000	+0.013 -0.009
			130	+0.014 -0.011

Plug for Holding Brake



Connector Wiring on the Brake, Motor Side	
A	Brake Terminal
B	Brake Terminal
C	—

Motor Plug



Connector Wiring on the Motor Side	
A	U Phase
B	V Phase
C	W Phase
D	Ground Terminal

Non-Environmental Mating Connector:
MS3108A10SL-3S (L Type)
MS3106A10SL-3S (Straight Type)
Cable Clamp: MS3057-4A