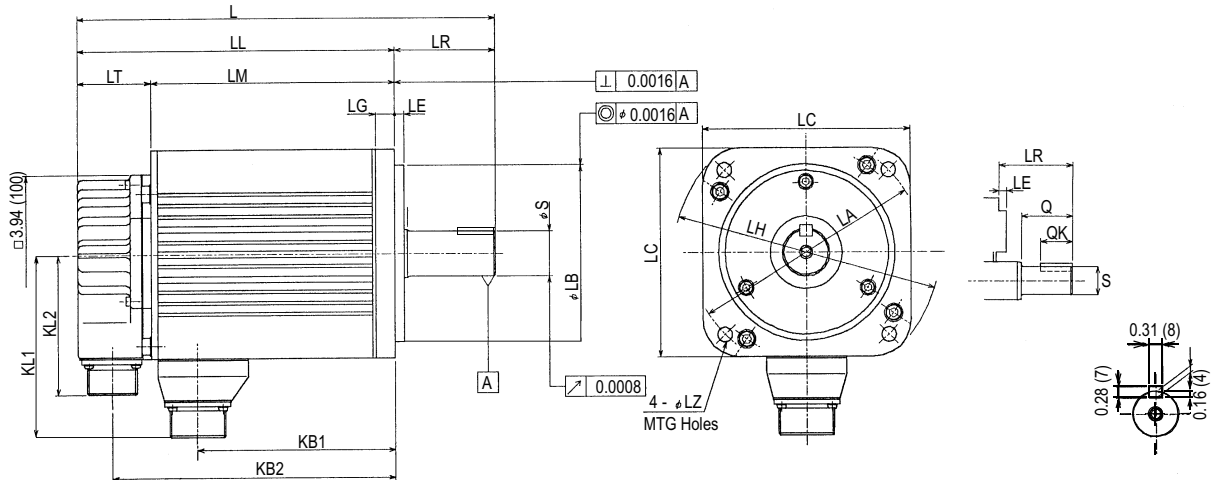


## Dimensions in inches (mm)

### (1) 17-bit Incremental or Absolute Encoder

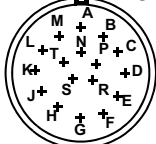


Type SGM5H-	L	LL	LM	LR	LT	KB1	KB2	KL1	KL2	Flange Dimensions						Shaft End Dimension			Approximate Mass lb <sub>r</sub> (kg)	Allowable Radial Load lb <sub>r</sub> (N)	Allowable Thrust Load lb <sub>r</sub> (N)			
										φLA	φLB	LC	LE	LG	φLH	φLZ	φS	Q				QK		
10A□A61	7.64 (194)	5.87 (149)	4.06 (103)	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)			4.02 (102)	6.06 (154)			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)	12.8 (5.8)
20A□A61	9.57 (243)	7.8 (198)	5.98 (152)			4.92 (125)	6.97 (177)			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)
30A□A61	10.31 (262)	7.83 (199)	6.02 (153)	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)	24.3 (11)	220 (980)	88 (392)		
40A□A61	11.77 (299)	9.29 (236)	7.48 (190)			6.26 (159)	8.46 (215)			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)			30.9 (14)	
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)	24.3 (11)			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

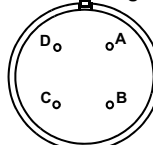


MS3102A20-29P

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 <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

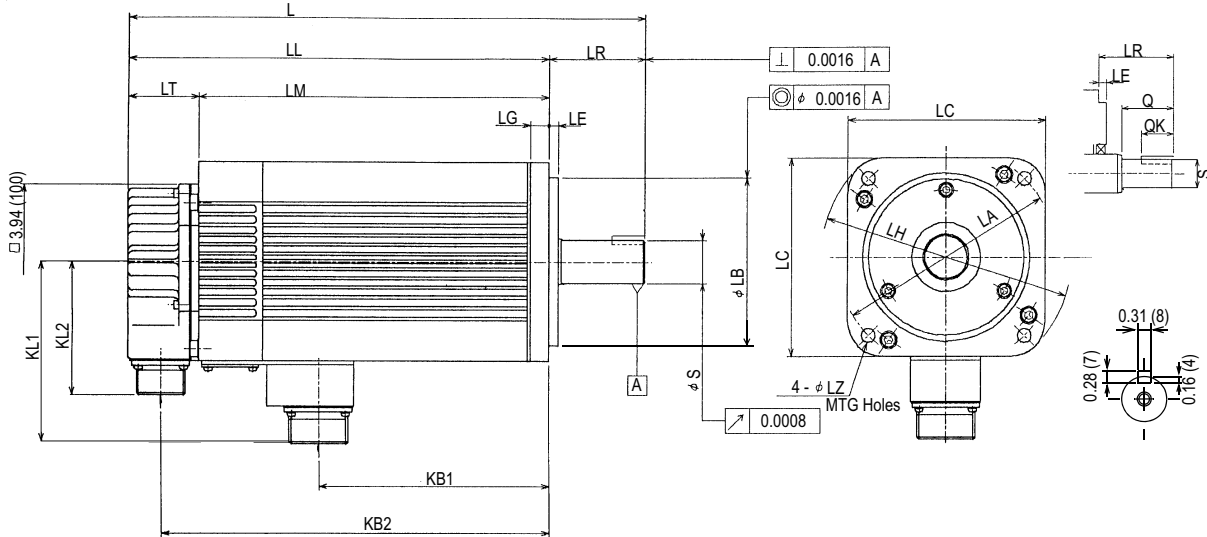
Motor Plug



MS3102A22-22P

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

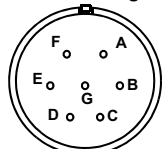


Type SGMSH-	L	LL	LM	LR	LT	KB1	KB2	KL1	KL2	Flange Dimensions						Shaft End Dimension			Approximate Mass lb <sub>r</sub> (kg)	Allowable Radial Load lb <sub>r</sub> (N)	Allowable Thrust Load lb <sub>r</sub> (N)	
										φLA	φLB	LC	LE	LG	φLH	φLZ	φS	Q				QK
10A□A6C	9.37 (238)	7.6 (193)	5.79 (147)	1.77 (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)			4.53 (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)	16.5 (7.5)		
20A□A6C	11.3 (287)	9.53 (242)	7.72 (196)	1.77 (45)		4.57 (116)	8.7 (221)			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)	18.7 (8.5)		
30A□A6C	11.81 (300)	9.33 (237)	7.52 (191)	1.77 (45)		4.45 (113)	8.5 (216)			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)	30.9 (14)	220 (980)	88 (392)
40A□A6C	14.84 (377)	10.79 (274)	8.98 (228)	2.48 (63)		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)	
50A□A6C	14.84 (377)	12.36 (314)	10.55 (268)	2.48 (63)	7.48 (190)	11.54 (293)	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)		