



SmartDrive

• DRIVES AND CONTROLS •













ELECTRONICS

Servo Motors

CSM-Series



Servo Motor Types

AC Servo Motors		Rated Output	Rated/Maximum Speed	Motor Structure	Protection Class
C S M		15W ~ 1kW	3000/ 5000RPM	Cylinder	IP45/ IP65
		50W ~ 800W			
C S M Q		100W ~ 400W	3000/ 5000RPM	Pan Cake	IP65
C S M Z		30W ~ 750W	3000/ 5000RPM	Cylinder	
C S M D		750W ~ 5kW	2000/ 3000RPM	Cylinder	IP55
C S M F		400W ~ 4.5kW	2000/ 3000RPM	Pan Cake (Flat)	
C S M S		1KW ~ 5KW	3000/ 5000RPM	Cylinder	
C S M H		500W ~ 5kW	2000/ 3000RPM	Cylinder	
C S M N		300W ~ 6kW	1000/ 2000RPM	Cylinder	
C S M X		150W ~ 4.4kW	1500/ 1500RPM	Pan Cake	

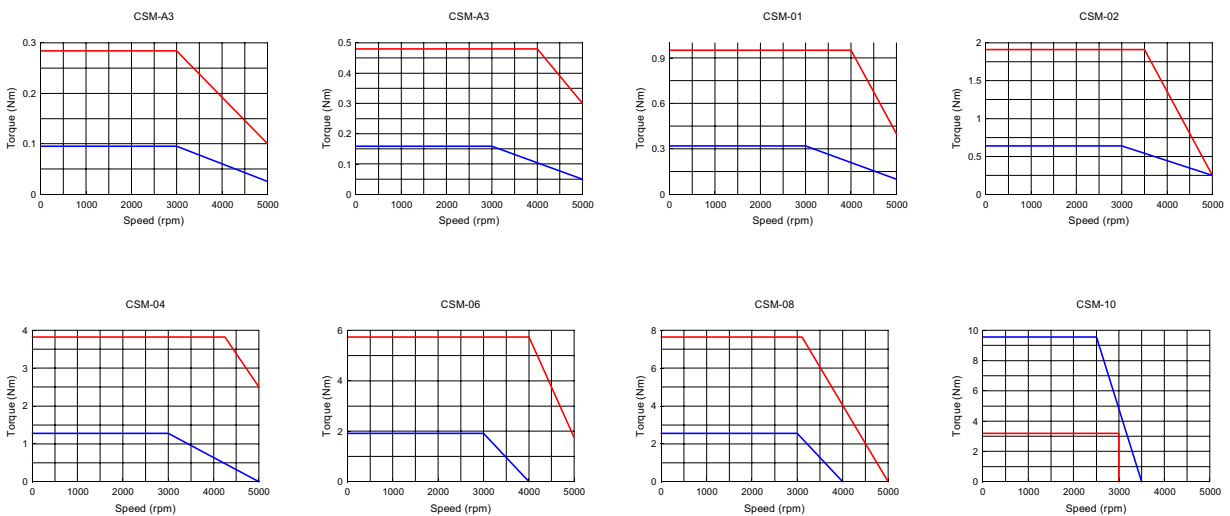
Rotor Inertia (x10 ⁴ kg·m ²)	Encoder			Main Features
	Incremental	Brief Incremental	Absolute	
Low 0.0127~1.62	<ul style="list-style-type: none"> · 15 line · 2048 ppr · 2000 ppr · 3000 ppr 	<ul style="list-style-type: none"> · 9 line · 2048 ppr 	<ul style="list-style-type: none"> · 2048 ppr · Position 11 bits · Resolution 13 bits 	<ul style="list-style-type: none"> · Compact and light design · Operation up to 5000rpm · Up to 1kW Output · Low rotor inertia · Various gear ratios (CSMG motors)
Low 0.0127~1.62				
Low 0.09~0.65		<ul style="list-style-type: none"> · 11 line · 2500 ppr 	<ul style="list-style-type: none"> · 14 line · 2048 ppr · Position 11 bits · Resolution 13 bits 	<ul style="list-style-type: none"> · Compact and light design · Operation up to 5000rpm · Up to 750W Output · Low rotor inertia
Low 0.016~1.34				
Middle 2.82~78	<ul style="list-style-type: none"> · 15 line · 1000 ppr · 2500 ppr 	<ul style="list-style-type: none"> · 11 line · 2500 ppr · 5000 ppr 	<ul style="list-style-type: none"> · 14 line · 2048 ppr · Position 11 bits · Resolution 13 bits 	<ul style="list-style-type: none"> · Compact and light design · Operation up to 3000rpm · Up to 5kW Output · Medium rotor inertia
Middle 2.45~78.5				<ul style="list-style-type: none"> · Super flat high output · Operation up to 3000rpm · Up to 4.5kW Output
Low 1.69~20.4				<ul style="list-style-type: none"> · Compact light design · Low inertia · Operation up to 5000rpm · Up to 5kW Output
High 15.2~176				<ul style="list-style-type: none"> · Compact light design · High Inertia · Operation up to 3000rpm · Up to 5kW Output
Highest 13.5~240	<ul style="list-style-type: none"> · 15 line · 3000 ppr · 6000 ppr 		<ul style="list-style-type: none"> · 14 line · 2048 ppr · Position 11 bits · Resolution 13 bits 	<ul style="list-style-type: none"> · High Inertia · Low speed/high torque · Operation up to 2000rpm · Up to 6kW Output
Higher 1.3~143				<ul style="list-style-type: none"> · High Inertia · Mid speed/high torque · Operation up to 2500rpm · Up to 4.4kW Output

CSM - Series AC Servo Motor

Specification

Specification		Rating								
Rated Output (W)		30	50	100	200	400	600	800	950	
Suitable Drive		CSDJ-01BX1	CSDJ-01BX1	CSDJ-01BX1	CSDJ-02BX1	CSDJ-04BX1	CSDJ-10BX1	CSDJ-10BX1	CSDJ-10BX1	
Rated/Max Speed(RPM)		3000/5000							3000/3-500	
Current A(rms)	Continuous	0.3	0.5	0.9	1.4	3.2	4.2	4.6	4.6	
	Max.	0.9	1.5	2.7	4.2	9.6	12.6	13.8	13.8	
Torque	Rated	kgf·cm	0.97	1.62	3.25	6.5	13.0	19.5	26.0	32.5
		N·m	0.095	0.159	0.319	0.637	1.274	1.911	2.548	3.185
	Max	kgf·cm	2.9	4.9	9.7	19.5	39.0	58.5	78.0	97.5
		N·m	0.284	0.48	0.951	1.911	3.822	5.733	7.644	9.555
Rotor Inertia	{(GD ² /4)kg·m ² }	0.0127 x10 ⁻⁴	0.0225 x10 ⁻⁴	0.0421 x10 ⁻⁴	0.196 x10 ⁻⁴	0.363 x10 ⁻⁴	1.0 x10 ⁻⁴	1.303 x10 ⁻⁴	1.62 x10 ⁻⁴	
	gf·cm·s ²	0.013	0.023	0.043	0.2	0.37	1.02	1.33	1.65	
Allowable Load Inertia	{(GD ² /4)kg·m ² }	0.382 x10 ⁻⁴	0.676 x10 ⁻⁴	1.264 x10 ⁻⁴	4.508 x10 ⁻⁴	4.351 x10 ⁻⁴	6.997 x10 ⁻⁴	7.82 x10 ⁻⁴	5.66 x10 ⁻⁴	
	gf·cm·s ²	0.39	0.69	1.29	4.6	4.44	7.14	7.98	5.775	
Weight(kg)		0.3	0.4	0.5	1.1	1.7	3.2	3.4	3.8	
Applicable Encoder		Brief Incr.(2048 ppr, 9 line) Option: Normal Incr.(2000, 2500ppr), Absolute Encoder, etc								

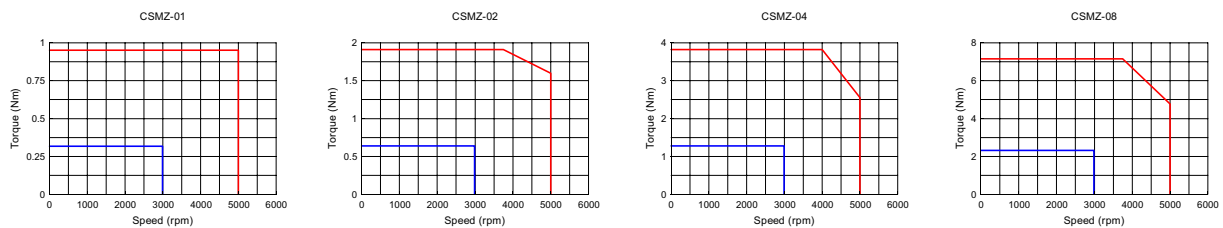
Torque Characteristics



Specification

Specification		Rating				
Rated Output (W)		100	200	400	750	
Suitable Drive		CSDJ-01BX1	CSDJ-02BX1	CSDJ-04BX1	CSDJ-10BX1	
Rated/Max Speed(RPM)		3000/5000			3000/4500	
Current A(rms)	Continuous	1.0	1.6	2.5	4.3	
	Max.	3.04	4.87	7.42	12.94	
Torque	Rated	kgf·cm	3.24	6.5	13.0	24.3
		N·m	0.318	0.637	1.274	2.381
	Max	kgf·cm	9.7	19.5	39.0	73
		N·m	0.951	1.911	3.822	7.154
Rotor Inertia	{(GD ² /4)kg.m ² }	0.0157 x10 ⁻⁴	0.167 x10 ⁻⁴	0.363 x10 ⁻⁴	1.313 x10 ⁻⁴	
	gf·cm·s ²	0.063	0.17	0.37	1.34	
Allowable Load Inertia	{(GD ² /4)kg.m ² }	1.8522 x10 ⁻⁴	4.998 x10 ⁻⁴	10.153 x10 ⁻⁴	6.566 x10 ⁻⁴	
	gf·cm·s ²	1.89	5.1	10.36	6.7	
Weight(kg)	No Brake	0.56	1.0	1.6	3.2	
	With Brake	0.76	1.4	2.0	3.9	
Applicable Encoder		Incremental 2500pp), Absolute Encoder 2048 ppr				

Torque Characteristics

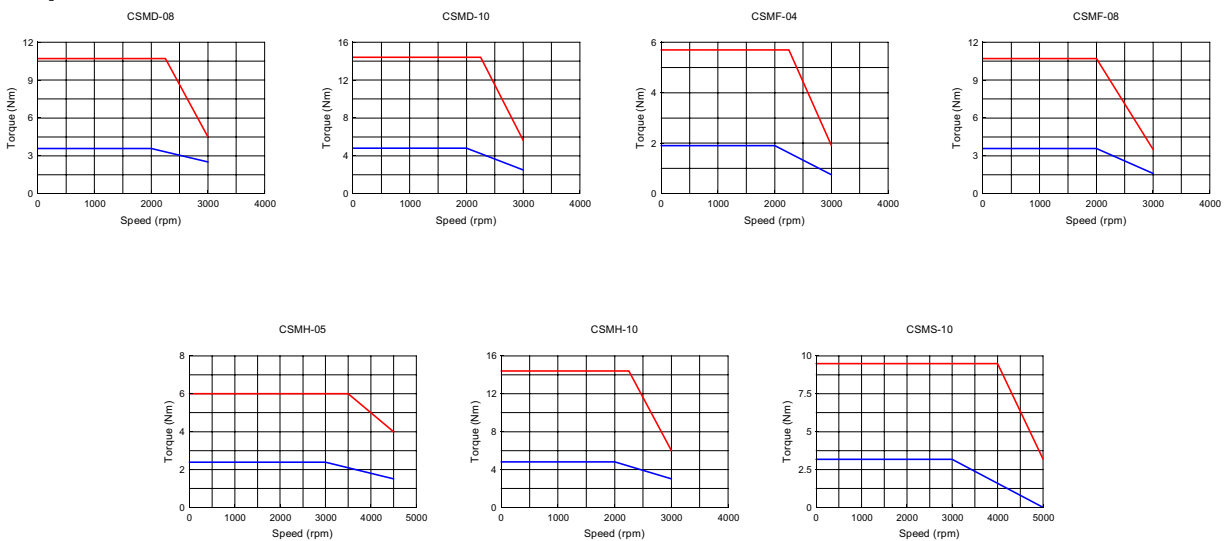


CSMx - Series AC Servo Motor

Specification

Specification		CSMD		CSMF		CSMH		CSMS		
Rated Output (W)		800	1000	400	800	500	1000	1000		
Suitable Drive		CSDJ-10BX1	CSDJ-10BX1	CSDJ-06BX1	CSDJ-10BX1	CSDJ-06BX1	CSDJ-10BX1	CSDJ-10BX1		
Rated/Max Speed(RPM)		2000/3000						3000/ 5000		
Current A(rms)		Continuous	5.0	5.6	2.8	5.0	3.2	5.6	7.2	
		Max.	15.0	16.8	8.4	15	8.1	16.8	21.6	
Torque		Rated	kgf·cm	36.4	49	19.5	36.4	24.3	49	32.4
			N·m	3.57	4.8	1.9	3.57	2.38	4.8	3.18
		Max	kgf·cm	109	147	58.5	109	61	147	97
			N·m	10.7	14.4	5.7	10.7	6.0	14.4	9.5
Rotor Inertia		{(GD ² /4)kg.m ² }		2.82 x10 ⁻⁴	6.17 x10 ⁻⁴	2.45 x10 ⁻⁴	7.59 x10 ⁻⁴	14 x10 ⁻⁴	26 x10 ⁻⁴	1.69 x10 ⁻⁴
		gf·cm·s ²		2.88	6.3	2.5	10.3	14.3	26.5	1.72
Weight(kg)		4.8	6.8	4.7	8.6	6.9	9.5	4.5		
Applicable Encoder		Brief Incr.(2048 ppr, 9 line)						Option: Normal Incr.(2000, 2500ppr), Absolute Encoder, etc		

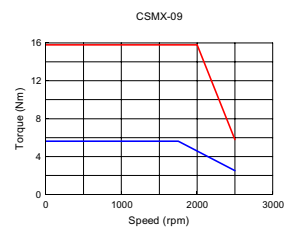
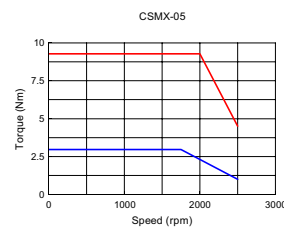
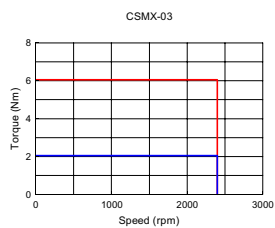
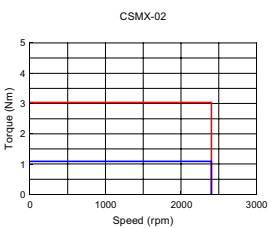
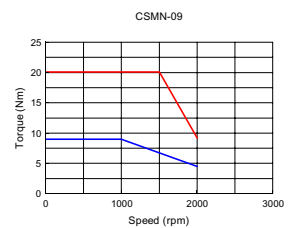
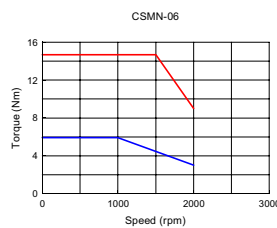
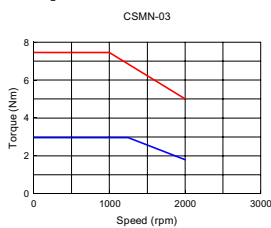
Torque Characteristics



Specification

Specification		CSMN			CSMX				
Rated Output (W)		300	600	900	200	300	500	900	
Suitable Drive		CSDJ-02BX1	CSDJ-06BX1	CSDJ-10BX1	CSDJ-02BX1	CSDJ-02BX1	CSDJ-06BX1	CSDJ-10BX1	
Rated/Max Speed(RPM)		1000/2000			1500/2500				
Current A(rms)	Continuous	3.0	5.8	7.6	3.0	3.0	3.8	6.2	
	Max.	7.3	13.9	16.6	9.0	9.0	11	17.0	
Torque	Rated	kgf·cm	29.0	58.0	88.0	10.0	20.0	29	55.0
		N·m	2.96	5.93	8.97	1.09	2.04	2.96	5.61
	Max	kgf·cm	73.0	144.0	197.0	30.0	59.0	91	155.0
		N·m	7.46	14.68	20.09	3.03	6.06	9.28	15.81
Rotor Inertia	{(GD ² /4)kg·m ² }	13.8 x10 ⁻⁴	24.8 x10 ⁻⁴	37.4 x10 ⁻⁴	1.33 x10 ⁻⁴	2.1 x10 ⁻⁴	13.8 x10 ⁻⁴	24.3 x10 ⁻⁴	
	gf·cm·s ²	13.5	24.8	37.4	1.3	2.1	13.8	24.8	
Weight(kg)		10.0	15.0	21.0	3.5	4.0	10.0	15.0	
Applicable Encoder		6000ppr Incremental							

Torque Characteristics

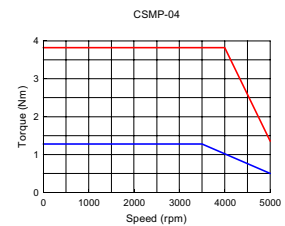
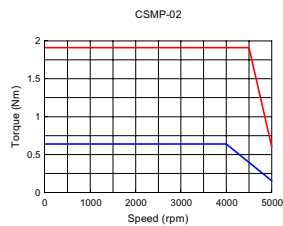
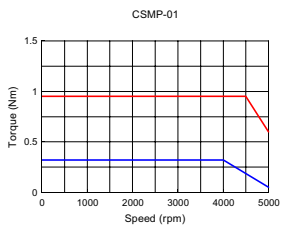
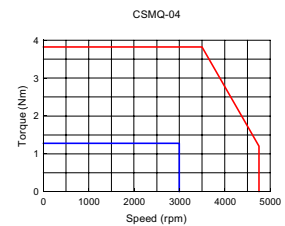
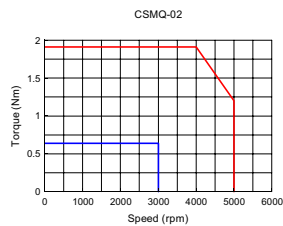
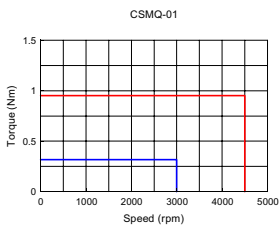


CSMQ/P - Series Servo Motor

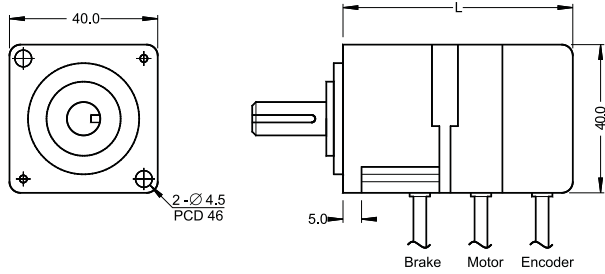
Specification

Specification		CSMQ			CSMP			
Rated Output (W)		100	200	400	100	200	400	
Suitable Drive		CSDJ-01BX1	CSDJ-02BX1	CSDJ-04BX1	CSDJ-01BX1	CSDJ-02BX1	CSDJ-04BX1	
Rated/Max Speed(RPM)		3000/5000			3000/5000			
Current A(rms)	Continuous	1.0	1.6	2.5	0.9	1.7	3.2	
	Max.	3.04	4.8	7.42	2.4	4.8	9.3	
Torque	Rated	kgf·cm	3.24	6.5	13.0	3.25	6.5	13
		N·m	0.318	0.637	1.274	0.319	0.637	1.274
	Max	kgf·cm	9.7	19.5	39.0	9.7	19.5	39
		N·m	0.951	1.911	3.822	0.951	1.911	3.822
Rotor Inertia	$\{(GD^2/4)kg.m^2\}$	0.09 $\times 10^{-4}$	0.34 $\times 10^{-4}$	0.64 $\times 10^{-4}$	0.2 $\times 10^{-4}$	0.44 $\times 10^{-4}$	0.74 $\times 10^{-4}$	
	gf·cm·s ²	0.09	0.35	0.65	0.2	0.45	0.76	
Allowable Load Inertia	$\{(GD^2/4)kg.m^2\}$	2.43 $\times 10^{-4}$	4.08 $\times 10^{-4}$	3.84 $\times 10^{-4}$	5.2 $\times 10^{-4}$	4.4 $\times 10^{-4}$	3.7 $\times 10^{-4}$	
	gf·cm·s ²	2.43	4.2	3.9	5.2	4.5	3.8	
Weight(kg)	No Brake	0.65	1.3	1.8	0.8	No Spec	No Spec	
	With Brake	0.9	2.0	2.5	1.3	1.8	3.1	
Applicable Encoder		Incremental 2500ppr, Absolute 2048ppr			Incremental 2048ppr, Absolute 2048ppr			

Torque Characteristics

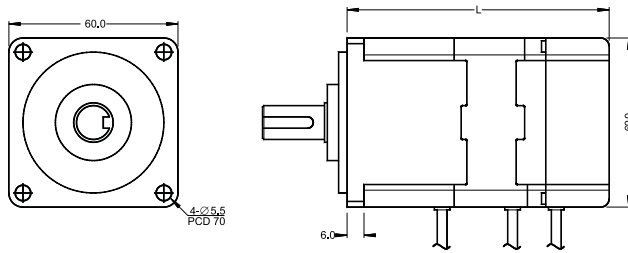


CSM-A3/A5/01 (30, 50, 100W)



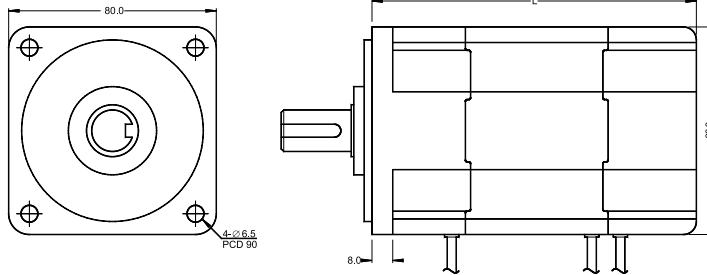
Output	Model	L(mm)	
		With Brake	No Brake
30W	CSM-A3	92.5	61.5
50W	CSM-A5	101.5	70.5
100W	CSM-01	119.5	88.5

CSM-02/04 (200, 400W)



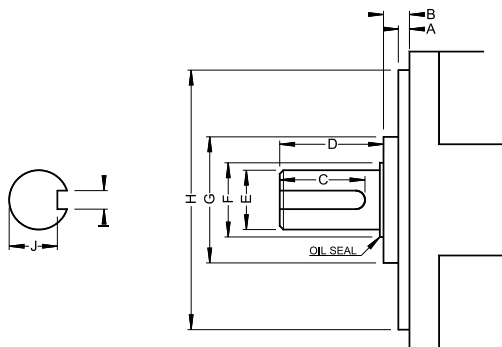
Output	Model	L(mm)	
		With Brake	No Brake
200W	CSM02	122.5	93
400W	CSM-04	121	150.5

CSM-06/08/10 (600, 800, 950W)



Output	Model	L(mm)	
		With Brake	No Brake
600W	CSM-06	156	125
800W	CSM08	173	142
950W	CSM-10	194	163

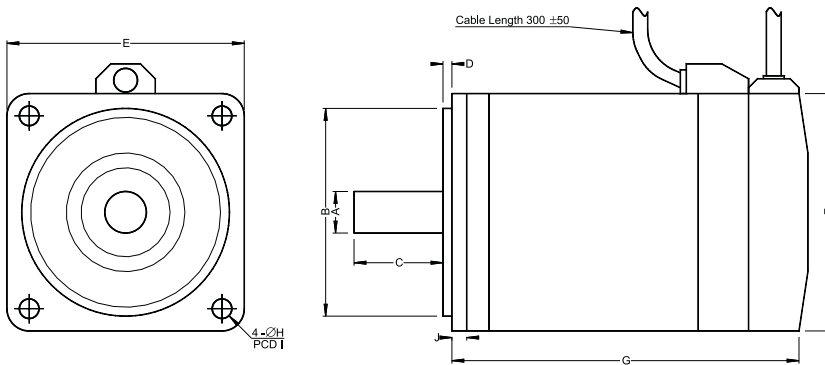
Shaft Detail



Motor	A	B	C	D	E	F	G	H	I	J	Key Spec
30, 50, 100W	2.5	4.5	10	20.5	8	9	20	30	3	6.2	3x3x10
200, 400W	3	7	20	23	12	14	22	50	4	9.5	4x4x20
600, 800, 950W	3	7	25	28	16	20	27	70	5	13	5x5x25

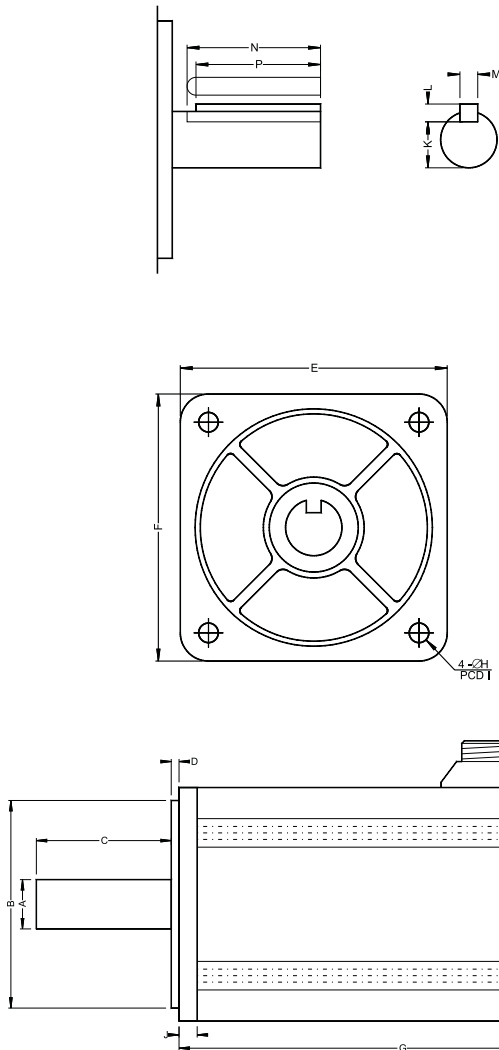
Motor Dimensions - CSMP & CSMD/F/H/S Motors

CSMP Motors



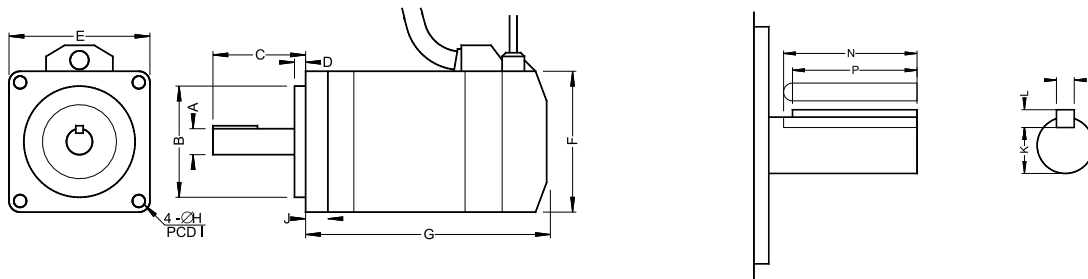
Rated Output(W)	100W	200W	400W
A	14	14	14
B	50	70	70
C	30	30	30
D	3	3	3
E	60	80	80
F	60	80	80
G	82	138.5	155.5
H	5.5	6.6	6.6
I	70	90	90
J	6	8	8

CSMD/F/H/S Motors



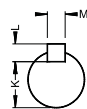
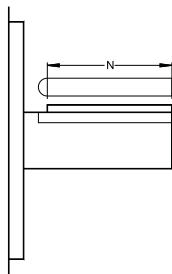
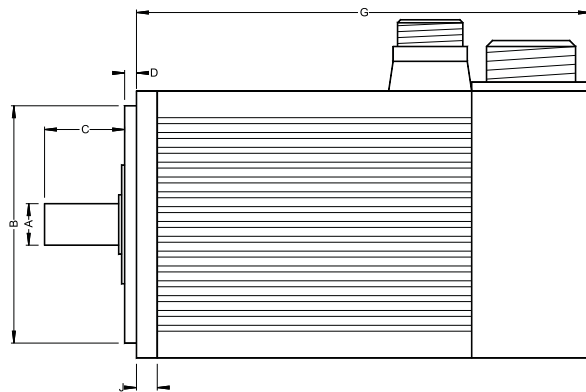
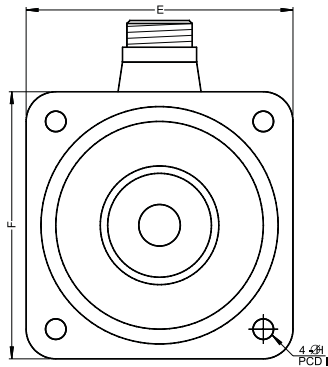
	CSMD	CSMS	CSMH	CSMH				
Rated Output (kW)	0.75	1.0	1.0	0.5	1.0	0.4	0.75	
A	19	22	19	22	22	19	22	
B	110	110	80	110	110	110	114-.3	
C	55	55	55	70	70	55	55	
D	3	6	3	6	6	6	3.2	
E	120	130	90	130	130	130	180	
F	120	130	90	130	130	130	180	
G	Incremental/ No Brake	144	147	172	147	172	117	122
	Incremental/ With Brake	169	172	197	172	197	142	147
	Absolute/ No Brake	173	176	201	176	201	146	151
	Absolute/ With Brake	198	201	226	201	226	171	176
H	9	9	6.6	9	9	9	13.5	
I	130	145	100	145	145	145	200	
J	12	12	7	12	12	12	18	
K	15.5	18.0	15.5	18.0	18.0	15.5	18.0	
L	6	7	6	7	7	6	7	
M	6	8	6	8	8	6	7	
N	45							
P	41	41	42	41	41	42	42	

Motor Dimensions - CSMQ/Z Motors

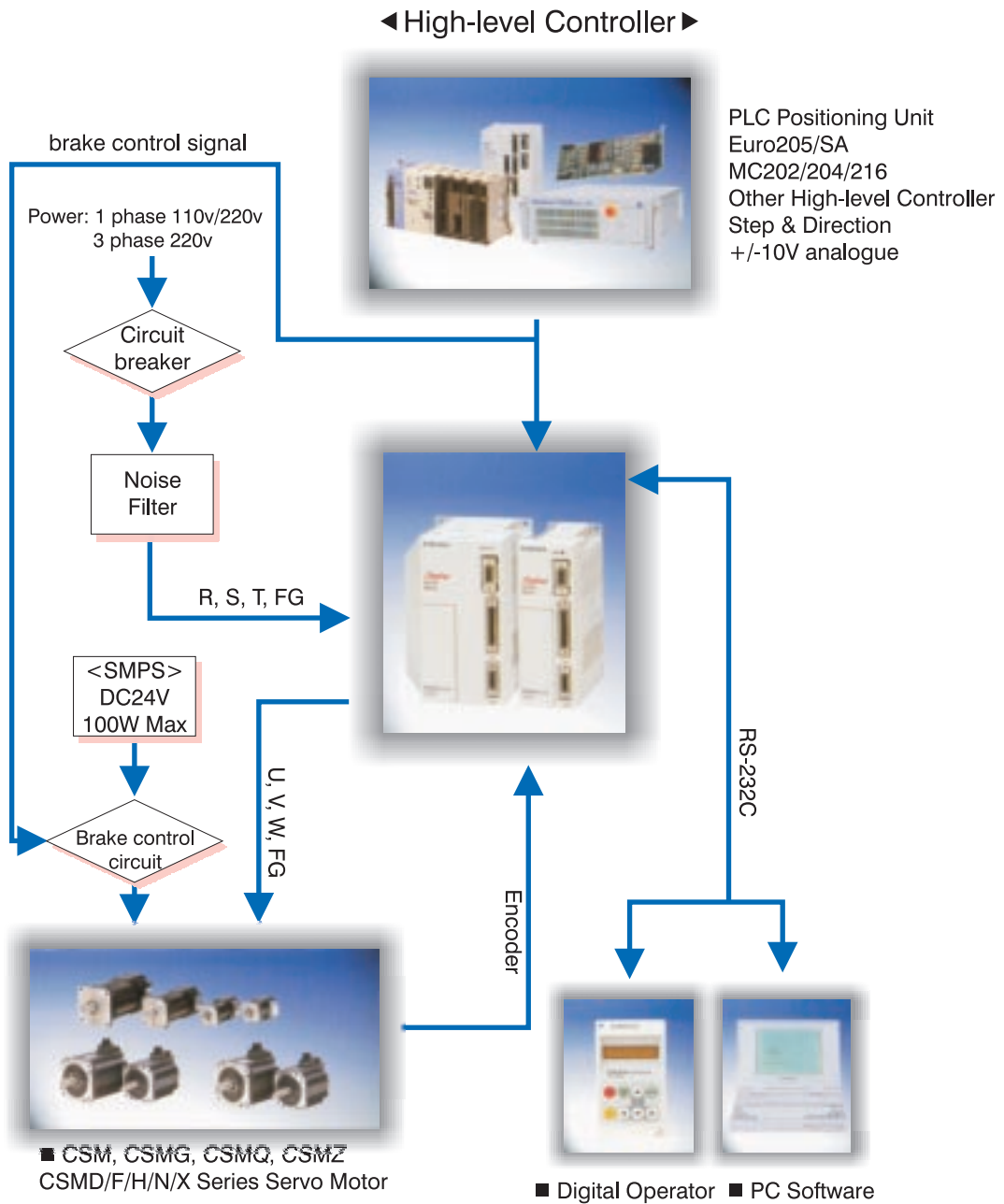


Series		CSMZ					CSMQ			
Rated Output (W)		30	50	100	200	400	750	100	200	400
A		7	8	8	11	14	19	8	11	14
B		30	30	30	50	50	70	50	70	70
C		25	25	25	30	30	35	25	30	30
D		3	3	3	3	3	3	3	5	5
E		38	38	38	60	60	80	60	80	80
F		38	38	38	60	60	80	60	80	80
G	No Brake	65	73	103	94	123.5	142.5	50	67	82
	With Brake	97	105	135	127	156.5	177.5	84	99.5	114.5
H		3.4	3.4	3.4	4.5	4.5	6	4.5	5.5	5.5
I		45	45	45	70	70	90	70	90	90
J		6	6	6	7	7	8	7	8	8
K		5.8	6.2	6.2	8.5	11	15.5	6.2	8.5	11
L		2	3	3	4	5	6	3	4	5
M		2	3	3	4	5	6	3	4	5
N		13	14	14	20	25	25	14	20	25
P		12	12.5	12.5	18	22.5	22	12.5	18	22.5

Motor Dimensions - CSMN/X Motors



Rated Output (kW)	CSMN			CSMX			
	0.3	0.6	0.9	0.15	0.3	0.45	0.85
A	19		22	14		19	
B	110			80		110	
C	52			33		52	
D	6			4		6	
E	130			90		130	
F	130			90		130	
G	205	262	331	153	199	205	265
H	9			6.9		9	
J	12			7		12	
K	26		18.5	11		16	
L	5		6	5			
M	5		6	5			
N	40			25		40	





Distributed in the UK by

SmartDrive Ltd

The Old School

8 Colne Road

Earith

Cambridge

PE28 3PX

United Kingdom

Tel +44 (0)1487 843663

Fax +44 (0)1487 843661

Web <http://www.smartdrive.co.uk>

E-Mail info@smartdrive.co.uk