

### SERVO MOTORS

For the past 20 years, FORMOSA MOTORS is well known for pursuing high technology motors in Taiwan. To make customer's requirements satisfactory & perfect We supply customers precision driver/controller with feed back sensor, low vibration & audible noise design and high efficiency. Also capable of making your custom design with very competitive price.



So pls keep good connection with us, you'll see our Excellence in the near future !

Product information & technical questions:

Please contact to Electrical division R&D

Dept by [telst@ms67.hinet.net](mailto:telst@ms67.hinet.net)





### DC SERVO MOTOR SPECIFICATION

Spec.	Model	FSK76-N075200	FSK76-N075300	FSK76-N075400	FSK76-N048100	FSK76-N048200	FSK76-N024100
Rated Output Power / W		200	300	400	100	200	100
Rated Torque/kg-cm		6.50	9.27	13.00	3.25	6.50	5.40
Rated Speed / rpm		3000	3000	3000	3000	3000	1800
Rated Current / A		3.30	4.80	6.50	2.30	4.60	4.90
Rated Voltage / V		75	75	75	48	48	24
Voltage Constant/ v/Krpm		22.62	23.33	23.33	15.20	14.80	11.75
Torque Constant / kg-cm		2.20	2.27	2.27	1.47	1.44	1.15
Static Friction Torque/kg-cm		0.50	0.60	0.75	0.50	0.60	0.50
Peak Current at Stall /A		16.00	18.50	26.40	40.00	52.00	46.00
Max. Rating Speed / rpm		4,000	4,000	4,000	4,000	4,000	2,500
Peak Torque at Stall /kg-cm		34.43	41.00	58.50	62.00	76.00	55.00
Mechanical Time Constant /ms		5.80	5.04	6.50	9.30	10.02	7.90
Electrical Time Constant/ ms		1.14	1.05	0.75	1.14	1.06	1.08
Weight / kg		2.10	2.40	2.80	2.10	2.40	2.10
Flange Size / mm		□ 76	□ 76	□ 76	□ 76	□ 76	□ 76
Housing Size / mm		∅ 90 x 111	∅ 90 x 126	∅ 90 x 146	∅ 90 x 111	∅ 90 x 126	∅ 90 x 111
Encoder / ppr	Magnetic or Optical type all available						
Brake	Y						
Driver	Y						

■ Please find the detailed **spur/planetary/worm gearhead** specification at “Mworld Standard Gearhead for industrial usage” section or contact our sales dep. by [telst@ms67.hinet.net](mailto:telst@ms67.hinet.net) for more detailed technical specification data/drawing.

■ Please find the detailed **Servo Motor Driver** specification at “Motor Drivers & Controllers” section or contact our sales dep. by [telst@ms67.hinet.net](mailto:telst@ms67.hinet.net) for more detailed technical spec. data/drawing.

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### PM Synchronous Type



### PM Synchronous AC Servo Motors (Sinusoidal Flux)

MODEL	Flange (mm)	Output (W)	Rated Speed (rpm)	Rated Torque (N.m)	Encoder (ppr)		Brake
					Magnetic	Optical	
FASP40-□□40	□40	50	3000	0.16	2000	2500P/R	Y
FASP40-□□100	□40	100		0.32			Y
FASP60-□□120	□60	120		0.38			Y
FASP60-□□200	□60	200		0.64			Y
FASP80-□□300	□80	300		0.96			Y
FASP80-□□500	□80	500		1.59			Y
FASP80-□□800	□80	800		2.50			Y
FASP130-□□1000	□130	1000	2000	5.15			Y
FASP130-□□1500	□130	1500		7.20			Y
FASP130-□□2000	□130	2000		9.50			Y
FASP180-□□3000	□180	3000		14.6			Y
FASP180-□□4500	□180	4500		21.9			Y
FASP180-□□6000	□180	6000		29.2			Y
FASP180-□□8500	□180	8500		41.8			Y
FASP220-□□11K	□220	11000		70.0	Y		
FASP220-□□15K	□220	15000		95.4	Y		

※ "Y" means available, "N" means not available.

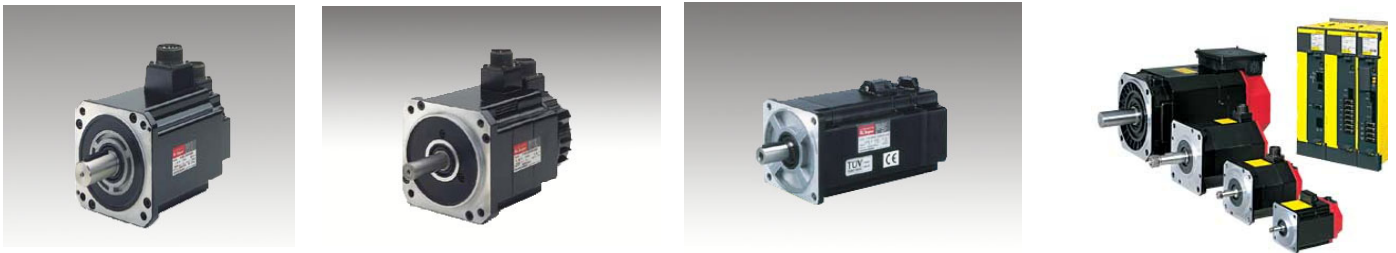
### PM Synchronous Spindle Servo Motors Typical Specification

Model		FASP2-A-2□	FASP3-A-2□	FASP7-A-2□	FASP11-A-2□	
Output	Continuous Rated	Output KW	1.5	2.2	5.5	7.5
		Torque N.m	7	14	35	47.7
	50% ED Rated	Output KW	2.2	3.7	7.5	11
		Torque N.m	14	23.5	47.7	70
Rated Voltage		V	220 single phase	220 single phase	380~440 singleΦ	380~440 singleΦ
Rotor Inertia		kgm <sup>2</sup>	3.3 x 10 <sup>-2</sup>	4.1 x 10 <sup>-2</sup>	3.3 x 10 <sup>-2</sup>	4.1 x 10 <sup>-2</sup>
Rated speed		rpm	1500	1500	1500	1500
Maximum speed		rpm	12000	12000	12000	12000
Mounting method		Vertical/ Horizontal				
Cooling method	Method	Forced Air Cooled				
	Electric Fan	220VAC, single phase, 65W				
Noise		dB	≤ 70			
Vibration		V5				
Encoder		Optical Electromagnetic type encoder				
Physical Size		mm	□185x408L	□185x438L	□225x477L	□225x517
Weight		Kg	77	84	77	84

■ Please find the detailed **Servo Motor Driver** specification at "Motor Drivers & Controllers" section or contact our sales dep. by [telst@ms67.hinet.net](mailto:telst@ms67.hinet.net) for more detailed technical spec. data/drawing.

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### AC Induction Servo Motors Typical Specification

MODEL	FAS-80		FAS-90			FAS-100		FAS-112			FAS-132	
Output (kw)	0.75	1.1	1.5	2.2	3.7	3.7	5.5	7.5	11.0	15	15	30
Motor Size mm	□140 x 337L	□140 x 337L	□140 x 357L	□140 x 383L	□140 x 448L	□200 x 478L	□200 x 478L	□224 x 543L	□224 x 653L	□224 x 653L	□264 x 553L	□264 x 553L
Poles	4		4			4		4			4	
Rotor inertia (kgm <sup>2</sup> )	0.0017	0.0021	0.0026	0.0032	0.0048	0.0049	0.006	0.013	0.018	0.024	0.035	0.063
Weight (kg)	13.0	14.4	16.4	18.9	26.0	29.5	33.0	45.0	55.0	72.0	77.5	123
Encoder	1024PPR 5Vdc 2CH+Z		1024PPR 5Vdc 2CH+Z			1024PPR 5Vdc 2CH+Z		1024PPR 5Vdc 2CH+Z			1024PPR 5Vdc 2CH+Z	
Elec. Fan	A2S130(Type) Ø 230V 50/60Hz 45/39W		A2S130(Type) Ø 230V 50/60Hz 45/39W			R2E180(Type)1 Ø 230V 50/60Hz 82/100W		R2E180(Type)1 Ø 230V 50/60Hz 82/100W			R2E225(Type)1 Ø 230V 50/60Hz 105/145W	
Bearings	LS:6206C3 OS:6205C3		LS:6206C3 OS:6205C3			LS:6307C3 OS:6305C3		LS:6308C3 OS:6306C3			LS:6309C3 OS:6308C3	

### General Data

Mounting	IM 3001 (B5)	IM 3001 (B5)	IM 2001 (B3 B5)	IM 2001 (B3 B5)	IM 2001 (B3 B5)
Protection	IP54	IP54	IP54	IP54	IP54
Rotor Balancing	R Degree	R Degree	R Degree	R Degree	R Degree
Insulation	Class H	Class H	Class H	Class H	Class H
Cooling Sys.	Forced Air Cooled	Forced Air Cooled	Forced Air Cooled	Forced Air Cooled	Forced Air Cooled
Thermal Protection	Thermal Protector (NC)	Thermal Protector (NC)	Thermal Protector (NC)	Thermal Protector (NC)	Thermal Protector (NC)
Noise	80dBA	80dBA	80dBA	80dBA	80Dba
Ambient Temp.	-15°C - 40°C	-15°C - 40°C	-15°C - 40°C	-15°C - 40°C	-15°C - 40°C
Altitude	1000m ASL	1000m ASL	1000m ASL	1000m ASL	1000m ASL

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## AC Induction Servo Motors Electrical Performance

Size	Rated speed	Max. Torque	Rated Torque	Rated Output	Rated Current				Rated Frequency
					190v	220v	330v	380v	
	RPM	kg.m	kg.m	kw	190v	220v	330v	380v	Hz
□140x338L	2000	1.05	0.38	0.75	3.6	3.1	2.1	1.8	66.7
	3000	1.05	0.38	1.1	5.3	4.	3.0	2.6	100
	4000	0.98	0.35	1.4	6.5	5.6	3.7	3.2	133.3
□140x338L	2000	1.51	0.54	1.1	5.1	4.4	2.9	2.5	66.7
	3000	1.49	0.54	1.6	7.1	6.2	4.1	3.6	100
	4000	1.47	0.52	2.1	9.0	7.8	5.2	4.5	133.3
	RPM	kg.m	kg.m	kw	190v	220v	330v	380v	Hz
□140x358L	1500	2.08	0.75	1.1	4.9	4.2	2.8	2.4	50
	2000	2.08	0.75	1.5	6.9	6.0	4.0	3.4	66.7
	3000	1.86	0.66	2.0	8.8	7.6	5.1	4.4	100
	4000	1.74	0.62	2.5	10.6	9.2	6.1	5.3	133.3
□140x382L	1500	3.06	1.09	1.6	7.0	6.0	4.0	3.5	50
	2000	3.06	1.09	2.2	10.0	8.6	5.8	5.0	66.7
	3000	2.80	1.00	3.0	13.1	11.3	7.6	6.5	100
	4000	2.65	0.95	3.8	16.0	13.8	9.2	8.0	133.3
□140x448L	1500	5.17	1.85	2.7	11.4	9.8	6.6	5.7	50
	2000	5.17	1.85	3.7	16.2	14.0	9.4	8.1	66.7
	3000	4.75	1.69	5.1	21.5	18.5	12.4	10.7	100
	4000	4.49	1.60	6.4	25.9	22.4	15.0	12.9	133.3
	RPM	kg.m	kg.m	kw	190v	220v	330v	380v	Hz
□200x478L	1500	5.0	1.7	2.8	12.4	10.7	7.1	6.2	50
	2000	5.0	1.7	3.7	17.0	14.7	9.8	8.5	66.7
	3000	4.7	1.6	5.2	23.0	19.8	13.3	11.5	100
	4000	4.6	1.5	6.3	26.8	23.1	15.5	13.3	133.3
□200x478L	1500	7.3	2.6	4.0	16.9	14.6	9.7	8.4	50
	2000	7.3	2.6	5.5	24.1	20.8	13.9	12.0	66.7
	3000	6.7	2.4	7.4	31.2	26.9	18.0	15.5	100
	4000	6.1	2.2	9.0	36.5	31.5	21.1	18.2	133.3

SIZE	Rated speed	Max.Torque	Rated Torque	Rated Output	Rated Current				Rated Frequency
					190v	220v	330v	380v	
	RPM	kg.m	kg.m	kw	190v	220v	330v	380v	Hz
□224x543L	1500	10	3.5	5.5	22.1	19.1	12.7	11.0	50
	2000	10	3.5	7.5	31.3	27.0	18.1	15.6	66.7
	3000	8.9	3.2	10.0	40.1	34.7	23.2	20.0	100
	4000	8.1	2.9	12.0	46.3	40.0	26.7	23.1	133.3
□224x653L	1500	14.8	5.3	8.2	32.3	27.9	18.7	16.1	50
	2000	14.8	5.3	11.0	45.1	39.0	26.0	22.5	66.7
	3000	13.3	4.7	14.8	58.3	50.4	33.7	29.1	100
	4000	10.8	3.8	16.5	62.5	54.0	36.1	31.2	133.3
□224x653L	1500	20.4	7.2	11.2	43.4	37.5	25.1	21.7	50
	2000	20.4	7.2	15.0	60.5	52.3	34.9	30.2	66.7
	3000	18.1	6.5	20.0	77.6	67.0	44.8	38.7	100
	4000	17.1	6.1	25.0	93.2	80.5	53.8	46.5	133.3

## Heavy Duty Type AC Induction Servo Motors Electrical Performance

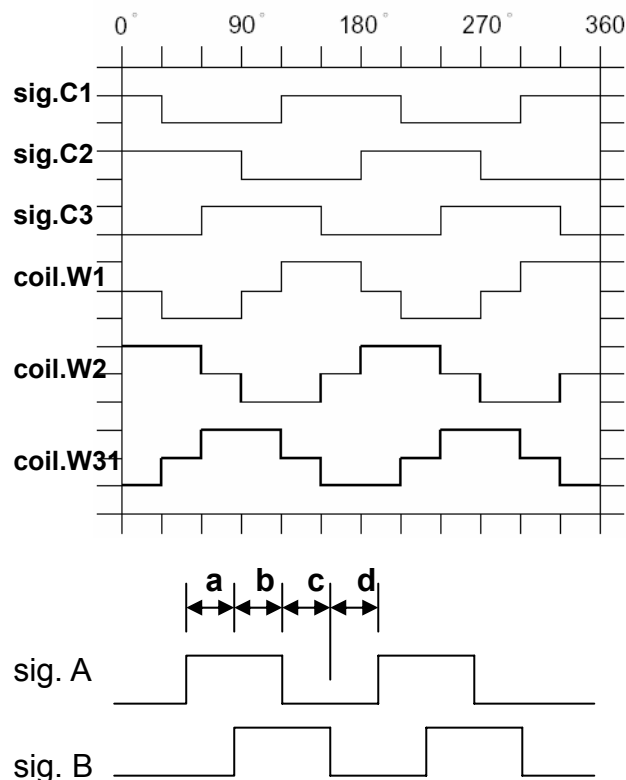
Size.	Rated speed	Max. Torque	Rated Torque	Rated Output	Rated Current				Rated Frequency
					190v	220v	330v	380v	
	RPM	kg.m	kg.m	kw					Hz
□264x553L	1500	20.4	7.2	11.2	43.1	37.2	24.9	21.5	50
	2000	20.4	7.2	15.0	60.0	51.8	34.6	29.9	66.7
	3000	18.9	6.5	20.0	76.9	66.4	44.4	38.4	100
	4000	17.6	6.2	25.0	92.5	79.8	53.4	46.1	133.3
□264x553L	1500	25.7	9.1	13.8	52.4	45.2	30.2	26.1	50
	2000	25.7	9.1	18.5	73.0	63.0	42.1	36.4	66.7
	3000	23.9	8.5	25.9	98.3	84.9	56.7	49.0	100
	4000	23.0	8.2	33.3	121.5	104.9	70.1	60.6	133.3
□264x713L	1500	30.6	10.9	16.5	62.4	53.9	36.0	31.1	50
	2000	30.6	10.9	22.0	86.5	74.7	49.9	43.1	66.7
	3000	28.5	10.2	31.1	117.6	101.5	67.9	58.6	100
	4000	25.7	9.1	37.4	136.0	117.4	78.5	67.8	133.3
□264x713L	1500	40.0	14.2	22	84.6	73.1	48.9	42.2	50
	2000	40.0	14.2	30	120.0	103.6	69.3	59.8	66.7
	3000	37.8	13.0	40	153.8	132.9	88.8	76.7	100
	4000	35.2	12.4	50	184.9	159.7	106.8	92.2	133.3

## OUTPUT SIGNAL

TYPE		HALL SENSOR	ENCODER
OUTPUT CIRCUIT		OPEN COLLECTOR	TTL COMPATIBLE
RESOLUTION	P/R	—	200, 400
NUMBER OF CHANNELS		C1,C2,C3	A,B
POWER SUPPLY	V-DC	5 ± 5%	5 ± 10%
CONSUMPTION CURRENT	mA	40 max.	50 max.
OUTPUT VOLTAGE	V-DC	14.4 min. (1Sink=15mA max)	VOH=2.4 min. VOL=0.4 max. (1Sink=3.2 mA)
PHASE OFFSET		—	a,b,c,d = 90° ± 45°
FREQUENCY RESPONSE	kHz	—	20 min.
OPERATING TEMP. RANGE		0°C ~ 60°C (TEMPERATURE INSIDE OF ENCODER)	

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## TIMING DIAGRAM



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