

Frameless Spindle Servo Motor - SKW Series

Overview

Description

SKW motors are compact and highly dynamic permanent magnet synchronous servomotors for mono and multi spindle applications up to 21 kW. Delivered as separate components to be integrated into the mechanical structure of the machine, SKW motors offer constant torque capabilities over a wide speed range with very small dimensions.



Advantages

- Compactness (small external diameter)
- Large hollow shaft
- Increased internal diameter compared to other solutions: increased rigidity and greater capacity for bar stock handling in automatic lathes
- High resistance (Oil proof)
- Compatible with cost effective sensorless drives from Parker and third parties
- Accurate speed for the spindle
 - for the best surface finish
 - for a shorter cycle time
 - for a longer tool life time
- Cold permanent magnet technology: reduced heating in the bearings compared to induction motors, low dilatation effect
- Global cost reduction
- Increased reliability and reduced maintenance
- High dynamic performance and power density: increased productivity and reduced size when compared to induction motors
- Simple, light and compact machine design
- No coupling systems needed
- Greater stiffness and robustness of the system
- Low noise level
- Integration assistance available

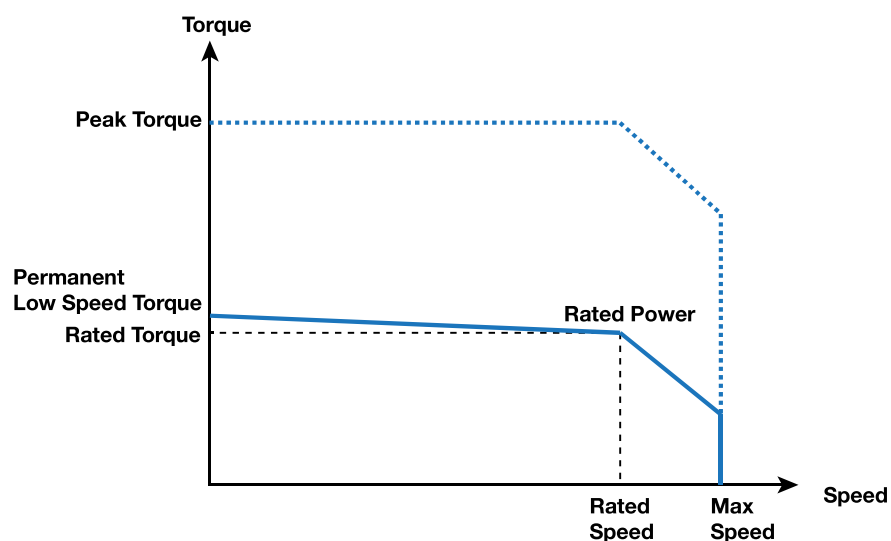
Technical Characteristics - Overview

Cooling	Water cooling
Power	0.2...7.5 kW
Torque	4...36 Nm
Speed	12 000 min ⁻¹
Number of poles	10
Diameter	73 – 82 – 91 – 96 mm
Power supply	400 VAC

Applications

- Machine Tools (electro spindle)
- Multi Spindle Lathes

Technical Data



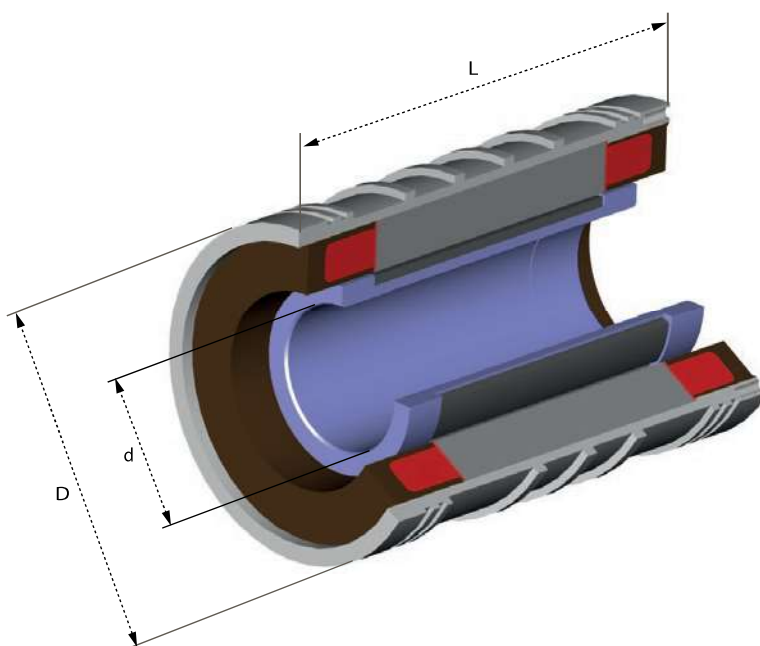
Motor	Rated Power P _n	Rated Torque M _n	Rated Speed N _n	Rated Current I _n	Low speed torque M ₀	Low speed Current I ₀	Peak Torque M _{peak}	Peak Current I _{peak}	Max. Speed N _{max}	Frequency at max speed	Moment of Inertia J
	[kW]	(Nm)	[min ⁻¹]	[Arms]	[Nm]	[Arms]	[Nm]	[Arms]	[min ⁻¹]	[Hz]	[kgmm ²]
400 VAC power supply - three-phased											
SKW073-050-LAM	3.1	4.0	7470	10.4	4.0	10.2	8.3	20.0	12000	1000	170
SKW073-100-LAM	6.3	8.8	6810	21.1	10.0	23.2	17.8	40.0	12000	1000	280
SKW073-150-LAM	9.7	13.5	6820	27.3	15.4	30.4	28.4	53.8	11000	917	390
SKW073-200-LAM	13.0	19.3	6450	40.9	21.8	45.2	37.8	75.8	11000	917	500
SKW082-046-LAM	5.1	4.0	12000	10.2	4.4	10.7	8.6	20.0	12000	1000	370
SKW082-092-LAM	10.7	9.3	11000	21.6	10.1	22.8	23.0	48.6	11000	917	670
SKW082-138-LAM	15.3	14.6	10000	30.6	15.8	32.3	31.0	60.0	10000	833	970
SKW082-184-LAM	21.2	20.3	10000	44.7	22.2	47.7	44.2	90.0	10000	833	1300
SKW091-046-LAM	6.9	5.5	12000	14.3	6.5	16.3	10.7	28.2	12000	1000	370
SKW091-092-LAM	15.4	12.2	12000	29.4	15.1	35.4	23.0	55.6	12000	1000	670
SKW091-138-LAM	20.8	19.9	10000	40.1	23.8	47.1	36.1	73.3	10000	833	970
SKW091-184-LAM	28.0	26.8	10000	56.8	31.9	66.4	48.1	103.4	10000	833	1300
SKW096-046-LAM	3.6	6.9	5010	12.9	7.1	13.1	13.7	26.0	10000	833	1000
SKW096-092-LAM	7.8	16.3	4570	28.1	16.8	28.7	33.8	60.0	10000	833	1800
SKW096-138-LAM	11.7	26.4	4240	41.4	27.4	42.4	54.3	87.9	9000	750	2500
SKW096-184-LAM	16.2	36.0	4300	59.6	37.4	61.2	70.6	120.0	9000	750	3300

Associated Drives

Product Code	Drive Reference		
	AC30	AC890	Compax3
SKW073_050LAM	31V-4E0023-B... (16A@ , OL 180% /3s)	890SD-532240C (16A@8kHz, OL 200%/4s)	C3S150V4...
SKW073_100LAM	31V-4F0038-B... (32A@ , OL 180% / 3s)	890SD-532390D (26A@8kHz, OL 200%/4s)	C3S300V4...
SKW073_150LAM	31V-4G0060-B... (45A@ , OL 180% / 3s)	890SD-532450D (28A@8kHz, OL 200%/4s)	C3S300V4...
SKW073_200LAM	31V-4H0105-B... (87A@ , OL 180% / 3s)	890SD-532590D (50A@4kHz, OL 200%/4s)	C3H050V4...
SKW082_046LAM	31V-4E0023-B... (16A@ , OL 180% /3s)	890SD-532240C (16A@8kHz, OL 200%/4s)	C3S150V4...
SKW082_092LAM	31V-4F0038-B... (32A@ , OL 180% / 3s)	890SD-532390D (26A@8kHz, OL 200%/4s)	C3S300V4...
SKW082_138LAM	31V-4G0060-B... (45A@ , OL 180% / 3s)	890SD-532450D (38A@4kHz, OL 200%/4s)	C3S300V4...
SKW082_184LAM	31V-4H0105-B... (87A@ , OL 180% / 3s)	890SD-532590D (50A@4kHz, OL 200%/4s)	C3H050V4...
SKW091_046LAM	31V-4F0032-B... (23A@ , OL 180% / 3s)	890SD-532240C (16A@8kHz, OL 200%/4s)	C3S300V4...
SKW091_092LAM	31V-4G0073-B... (60A@ , OL 180% / 3s)	890SD-532450D (38A@4kHz, OL 200%/4s)	C3H050V4...
SKW091_138LAM	31V-4H0105-B... (87A@ , OL 180% / 3s)	890SD-532450D (38A@4kHz, OL 200%/4s)	C3H050V4...
SKW091_184LAM	31V-4H0145-B... (145A@ , OL 110% / 60s)	890SD-432730E (76A@4kHz, OL 110%/60s)	C3H090V4...
SKW096_046LAM	31V-4F0032-B... (23A@ , OL 180% / 3s)	890SD-532240C (16A@8kHz, OL 200%/4s)	C3S150V4...
SKW096_092LAM	31V-4G0060-B... (45A@ , OL 180% / 3s)	890SD-532450D (28A@8kHz, OL 200%/4s)	C3S300V4...
SKW096_138LAM	31V-4G0073-B... (60A@ , OL 180% / 3s)	890SD-532590D (50A@4kHz, OL 200%/4s)	C3H050V4...
SKW096_184LAM	31V-4H0145-B... (145A@ , OL 110% / 60s)	890SD-432730E (76A@4kHz, OL 110%/60s)	C3H090V4...

Dimensions

Product Code	Dimensions [mm]		
	Total length L	Hollow shaft diameter d	External diameter D
SKW073_050LAM	114	35	80
SKW073_100LAM	164	35	80
SKW073_150LAM	219	35	80
SKW073_200LAM	274	35	80
SKW082_046LAM	104	44	96
SKW082_092LAM	150	44	96
SKW082_138LAM	201	44	96
SKW082_184LAM	252	44	96
SKW091_046LAM	104	44	102
SKW091_092LAM	155	44	102
SKW091_138LAM	206	44	102
SKW091_184LAM	262	44	102
SKW096_046LAM	104	60	108
SKW096_092LAM	155	60	108
SKW096_138LAM	206	60	108
SKW096_184LAM	262	60	108



Order Code

SKW Series

	1	2	3	4	5	6	7	8	9
Order example	SK	W	073	S	050	LAM	R	3	000

1	Product series	
	SK	Frameless permanent magnet servomotors
2	Cooling method	
	W	Water cooling (standard)
3	External diameter without water jacket	
	073	73 mm
	082	82 mm
	091	91 mm
	096	96 mm
4	Element	
	-	Motor (stator + rotor)
	S	Stator
	R	Rotor
5	Active part length	
	050	See table "Dimensions"
	...	
6	Torque/Speed characteristics	
	LAM	See table "Technical Data"
	...	(other characteristics on request)
7	Unused character	
	R	
8	Mechanical option	
	2	Without water jacket, with hub (only on request)
	3	With water jacket, with hub (standard)
9	Option	
	000	Standard motor