

PRODUCT NOTE

HDS high-performance AC PM servo motor

High density, high accuracy and high efficiency



The HDS series has a 10-pole design which provides more torque and less cogging for superior performance. Whether your need is positioning, speed, or efficiency, HDS series provides performance and reliability.

Features



High torque density and power density:
reduced volume and weight



Class F Insulation
Thermal protection: 3xPTC155
• IP54 without oil seal
• IP65 with oil seal



Ultra-high intrinsic, coercive field rare
earth magnets



Epoxy resin potting technology on
complete stator: compact size and
better heat dissipation



Low cogging torque and torque ripple:
excellent performance at low speed and
system control



Precise flange and shaft machining: low
noise and vibration



Outstanding overload performance: 3
times peak torque, 4 times mechanical
overload capacity



Various feedback options, including
resolver, incremental encoder, and many
types of absolute encoders including
Hiperface DSL - single cable solution

High-performance AC PM servo motors

Frame	Model	Input voltage	Continuous stall torque	Peak torque	Rated speed	Maximum speed	Rated power	Continuous stall current	Rated current	Peak current	Rotor inertia	Torque constant	Voltage constant	
			T ₀ (Nm)	T _P (Nm)	n _N (rpm)	n _{max} (rpm) ⁽¹⁾	P (kW)	I ₀ (A)	I _N (A)	I _P (A)	J _M (kg·cm ²) ⁽²⁾	K _t (Nm/A) ⁽³⁾	K _e (Vrms/krpm)	
HDS60 / HDS6A	HDS60-0102A	AC 230 V	0.7	2.23	3000	6000	0.2	1.5	1.3	5.1	0.20	0.554	33.5	
	HDS6A-0102A													
	HDS60-0104A	AC 230 V	1.4	4.46			0.4	2.8	2.6	10.5	0.34			
	HDS6A-0104A													
HDS80 / HDS8A	HDS80-0309A	AC 230 V	3.2	9.4	3000	6000	0.85	6.4	5.5	20.5	1.45	0.554	33.5	
	HDS8A-0309A													
	HDS80C-0309A										2.28			
	HDS8AC-0309A													
HDS65	HDS65-0102A	AC 230 V	0.7	1.8	3000	5000	0.19	1.9	1.6	5.8	0.16	0.41	25	
	HDS65-0104A		1.4	3.6			0.38	3.9	3.3	12	0.27			
	HDS65-0206A		2.1	5.4			0.57	5.5	4.7	17.6	0.38	0.44	26.4	
HDS100	HDS100-0206A	AC 230 V	2.8	6.0	3000	4000	0.63	4.3	3.1	11.5	0.76	0.73	44	
	HDS100C-0206A		2.8	6.0							2.00			
	HDS100-0308A		3.4	7.5			0.75	5.8	4.3	15.5	1.31	0.68	41.3	
	HDS100C-0308A		3.4	7.5							2.68			
	HDS100-0413A		5	12.0			1.3	8.6	6.9	25.7	1.31			
	HDS100C-0413A		5	12.0							2.68			
	HDS100-0619A		7.5	18.0			1.9	12.6	10.5	39.5	1.85	0.69	41.8	
	HDS100C-0619A		7.5	18.0							3.35			
	HDS130		HDS130-0620A	AC 230 V			7.2	19.1	3000	5000	2.0	11.5	10.9	36
HDS130C-0620A		7.2	19.1		10.80									
HDS130-1225A		14	36		2.5	19	16.2	54			7.46	0.818	49.5	
HDS130C-1225A		14	36								14.82			
HDS130-0817B		AC 400 V	10	24	2000	4000	1.7	9	7.7	29.5	4.06	1.22	73.5	
HDS130C-0817B			10	24							10.80			
HDS130-1226B			15	36			2.6	11.7	9.5	30.6	7.46	1.41	85.4	
HDS130C-1226B			15	36							14.82			
HDS130-1829B			20	54	1500		2.9	16.1	14.8	51	9.74	1.40	84.7	
HDS130C-1829B			20	54							17.70			
HDS180	HDS180-2540B	AC 400 V	29	75	1500	3500	4.0	18.0	15.7	48.8	44.60	1.750	105.9	
	HDS180C-2540B		29	75							146.60			
	HDS180-3555B		41	105			5.5	25.7	22.3	68.5	63.50	1.740	105.1	
	HDS180C-3555B		41	105							169.10			
	HDS180-4876B		53	150			7.6	33.0	30.8	99.7	82.10	1.750	105.9	
	HDS180C-4876B		53	150							191.30			
HDS240	HDS240-5011B	AC 400 V	65	150	2200	3000	11	31	23.5	93	107	2.200	135.0	
	HDS240-7215B		92	216	2000	2700	15	39	29.5	117	142	2.400	150.0	
	HDS240F-6715B		90	201	2200	3000		40	30.5	120	107	2.200	135.0	
	HDS240F-9320B		122	279	2000	2700	20	50	39	150	142	2.400	150.0	

(1) The max speed in applications shall be co-decided by the input voltage and the output frequency range and the output frequency range of the drive, feedback encoder type, etc. For higher speed applications, please contact ABB.

(2) Excluding brake inertia

(3) The torque constant K_t decreases in a non-linear manner as the torque increases, the K_t values are considered valid until approximately 2 times cont. stall torque T₀.