

# TECHNICAL CHARACTERISTICS 145ST

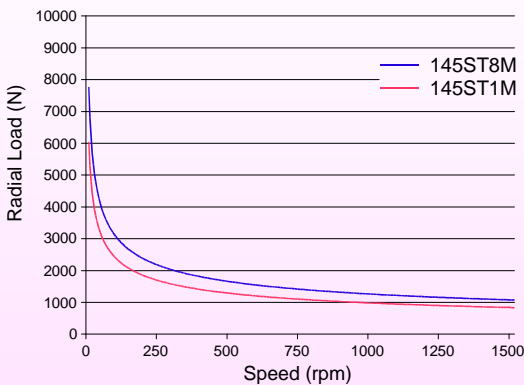
## Motors wound for 330 Vac phase to phase

			145ST2M		145ST4M		145ST6M		145ST8M	
Rated speed		rpm	500	1500	500	1500	500	1500	500	1500
Continuous torque at stall	(4)	N.m	14.6		26.4		37.3		47.4	
Current at continuous torque	(1)	A	2.3	5.2	3.7	9.2	5	12.7	6.4	15.7
Peak torque	(2)(3)	N.m	55		110		165		220	
Current at peak torque	(2)	A	10.2	23.1	17.8	45.5	27.3	68.3	35.6	91.1
Rated power	(1)	W	735	2032	1247	3134	1775	3480	2200	3850
Inertia without position feedback	(8)	Solid shaft	1.16		1.98		2.8		3.62	
		Hollow shaft Ø30	1.19		2.02		2.84		3.66	
		Blind shaft Ø56	2.46		3.41		4.37		5.32	
		Blind shaft Ø60	2.1		2.93		3.75		4.57	
Inertia with resolver		Hollow shaft Ø56	4.94		5.9		6.85		7.8	
		Hollow shaft Ø60	4.36		5.19		6.01		6.83	
Weight without position feedback with B5 flange	(6)(7)	Solid shaft	8.8		12.6		16.7		20.6	
		Hollow shaft Ø30	8.5		12.3		16.4		20.3	
		Blind shaft Ø56	9.7		13.8		17.8		21.9	
		Blind shaft Ø60	9.3		13.2		17.1		21	
Weight with resolver and B5 flange	(6)	Hollow shaft Ø56	14.6		18.5		22.6		26.5	
		Hollow shaft Ø60	14.1		17.8		21.8		25.5	
Thermal time constant	(1)(5)	s	1012		1399		1667		1866	
Thermal resistance	(1)(5)	°C/W	0.394		0.324		0.275		0.239	
Phase resistance at 20°C	(2)	Ω	12.9	2.55	6.2	0.95	3.46	0.55	2.51	0.38
Phase inductance at I continuous		mH	66.7	12.4	44.5	6.8	28.2	4.5	22.2	3.4
Electrical time constant	(2)	ms	5.1		7.2		8.2		8.9	
Back emf constant (line to line)	(2)	V/rad.s	4.25	1.91	4.88	1.91	4.78	1.91	4.88	1.91
Number of poles			12							

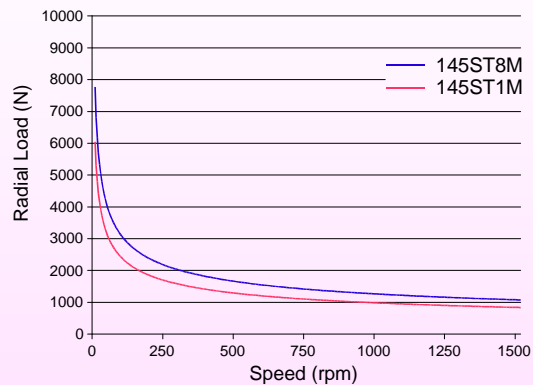
- (1) Ambient temperature: 20°C, Winding temperature rise: 120°C  
Motor in natural convection mounted on a □150 flange.
- (2) Cold motor at 20°C
- (3) See torque vs speed characteristics on : <http://www.alxion.com/CFN>
- (4) Consider a 7% derating with position feedback codes 2 and 7.
- (5) Housing – ambient
- (6) B14 flange: +0.2 kg
- (7) Position feedback options  
 1 : +1.5 kg  
 2 7 : +1.2 kg  
 3 : +0.34 kg  
 4 5 8 9 : +0.25 kg  
 6 : +0.1 kg
- (8) Position feedback options  
 1 :  $1.50 \cdot 10^{-3}$  kg.m<sup>2</sup>  
 2 7 :  $0.34 \cdot 10^{-3}$  kg.m<sup>2</sup>  
 3 :  $0.15 \cdot 10^{-3}$  kg.m<sup>2</sup>  
 4 5 8 9 :  $2.60 \cdot 10^{-6}$  kg.m<sup>2</sup>  
 6 :  $2.50 \cdot 10^{-6}$  kg.m<sup>2</sup>

### Maximum load for a 20 000h life time and axial load < 30% of radial load

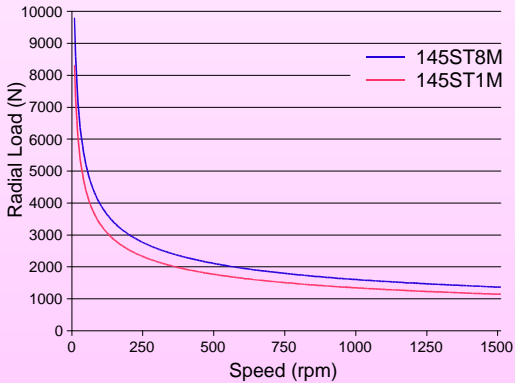
145 ST with solid shaft



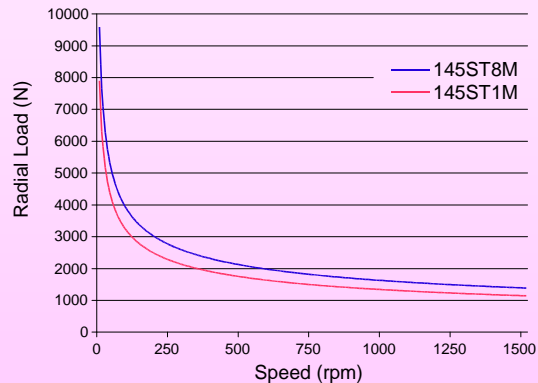
145ST with hollow shaft Ø30



145ST with blind shaft Ø56 & Ø60



145ST with hollow shaft Ø56 & Ø60



The values of load are given:  
 - For a smooth operation without shock.  
 - In rated conditions of motor operation.  
 - For a load applied in the middle of the shaft end.  
 The shaft end, on its own, cannot support the whole maximum load applied punctually.  
 In some cases, repartition of the load should be necessary, please contact us.  
 For atypical conditions (shocks, vibrations, temperature, environment), please contact us.