TECHNICAL CHARACTERISTICS 145ST

Windings for 400V / 460Vac drives (See Application note)

				145ST1M		145ST2M		145ST3M		145ST4M		145ST6M		145ST8M	
Rated speed			rpm	500	1500	500	1500	500	1500	500	1500	500	1500	500	1500
Continuous torque at stall		(4)	N.m	8		14.6		20.5		26.4		37.3		47.4	
Current at continuous torque		(1)	A	1.6	2.9	2.3	5.2	2.9	6.7	3.7	9.2	5	12.7	6.4	15.7
Peak torque		(2)(3)	N.m	27.5		55		83		110		165		220	
Current at peak torque		(2)	A	6.9	11.1	10.2	23.1	14.9	34.2	17.8	45.5	27.3	68.3	35.6	91.1
Rated power		(1)	W	390	866	710	1850	992	2504	1260	3080	1770	3830	2230	4580
Inertia without position feedback		Solid shaft	10^{-3}kg.m²	0.75		1.16		1.62		1.98		2.8		3.62	
	(8)	Hollow shaft Ø30		0.78		1.19		1.65		2.02		2.84		3.66	
		Blind shaft Ø56		1.99		2.46		2.94		3.41		4.37		5.32	
		Blind shaft Ø60		1.69		2.1		2.52		2.93		3.75		4.57	
Inertia with resolver		Hollow shaft Ø56		4.46		4.94		5.42		5.9		6.85		7.8	
		Hollow shaft Ø60		3.95		4.36		4.78		5.19		6.01		6.83	
Weight without position feedback With B5 flange	(6)(7)	Solid shaft	kg	6.9		8.8		10.7		12.6		16.7		20.6	
		Hollow shaft Ø30		6.6		8.5		10.4		12.3		16.4		20.3	
		Blind shaft Ø56		7.65		9.7		11.8		13.8		17.8		21.9	
		Blind shaft Ø60		7.35		9.3		11.3		13.2		17.1		21	
Weight with resolver and B5 flange	(6)	Hollow shaft Ø56		12.65		14.6		16.55		18.5		22.6		26.5	
		Hollow shaft Ø60		12.25		14.1		16		17.8		21.8		25.5	
Thermal time constant		(1)(5)	s	850		1012		1206		1399		1667		1866	
Thermal resistance		(1)(5)	°C/W	0.447		0.394		0.36		0.324		0.275		0.239	
Phase resistance at 20°C		(2)	Ω	21.6	7.9	12.9	2.55	7.52	1.43	6.2	0.95	3.46	0.55	2.51	0.38
Phase inductance at I continuous			mH	72	25.8	66.7	12.4	47.8	9.1	44.5	6.8	28.2	4.5	22.2	3.4
Electrical time constant		(2)	ms	3.4		5.1		6.4		7.2		8.2		8.9	
Back emf constant (line to line)		(2)	V/rad.s	3.13	1.86	4.25	1.91	4.38	1.91	4.88	1.91	4.78	1.91	4.88	1.91
Power cable square section			nxmm2	4x1.5		4x1.5		4x1.5		4x1.5		4x1.5		4x1.5	
Power cable diameter			mm	Ø8.6		Ø8.6		Ø8.6		Ø8.6		Ø8.6		Ø8.6	
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/

(4) Consider a 7% derating with position feedback codes 2, 7, A & B.

(5) Housing – ambient

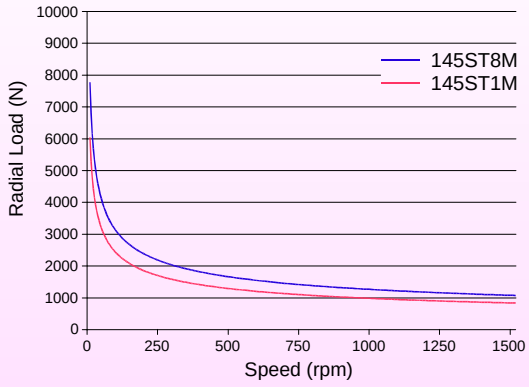
(6) B14 flange: +0.2 kg

(7) (8) Weight & Inertia function of feedback option

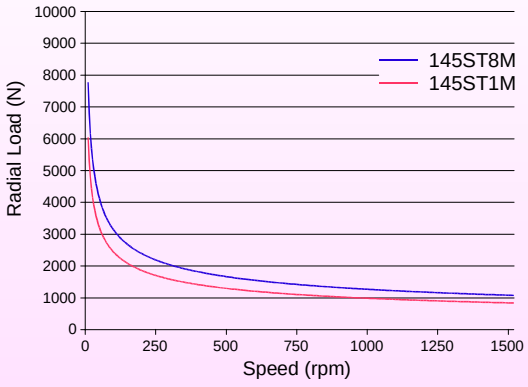
1	: + 1.5 kg	+ $1.50.10^{-3}$ kg.m²
2, 7, A & B	: + 1.2 kg	+ $0.34.10^{-3}$ kg.m²
3	: + 0.34kg	+ $0.15.10^{-3}$ kg.m²
4, 5, 8, 9, C & D	: + 0.25kg	+ $2.60.10^{-6}$ kg.m²
6	: + 0.1 kg	+ $2.50.10^{-6}$ kg.m²

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

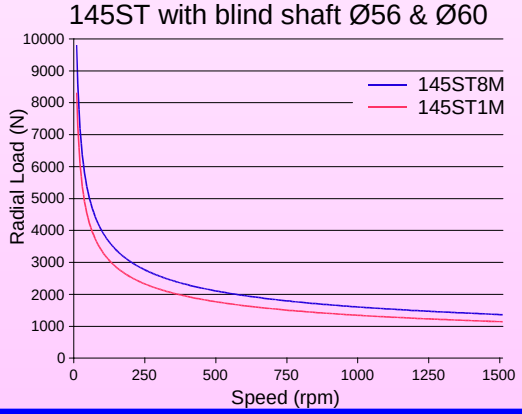
145 ST with solid shaft



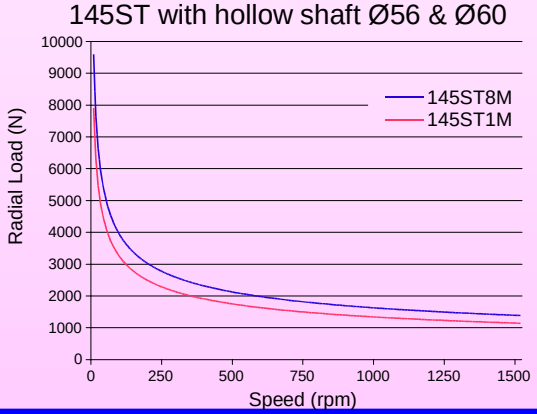
145ST with hollow shaft Ø30



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.