Nidec

Drives

Unimotor TC4 Servomotors

Flexible, dynamic and interchangeable for new and existing applications

TC4

4th generation of Control Techniques servomotors

Control Techniques offer drive and motor combinations that provide an optimised system in terms of ratings, performance, cost, and ease of use.

This new series of servomotors is designed as a direct mechanical replacement for the Unimotor FM range with direct compatibility of feedback wiring interfaces.

The new servomotor features a range of feedback options that suit different levels of accuracy and resolution to suit most applications:

FM4 180

- Resolver: robust for extreme applications and conditions (low accuracy, medium resolution).
- Incremental encoder: for cost sensitive applications (low accuracy, medium resolution).
- Absolute encoder supporting EnDat or Hiperface DSL (medium accuracy, high resolution).
- SIL2 or SIL3 rated encoder options (upon verification with the technical department).
- Single cable option available (upon verification with the technical department).

Contents

Features

Motor type	Three-phase BPM synchronous servo motor
Available frame sizes	60 – 80 – 100 – 130 – 150 mm
Rated output torque	From 0.56 to 19,1 Nm
Rated output power	From 200 to 6000 W
Rated servomotor speed	Up to 6000 rpm
Maximum servomotor speed	Up to 8000 rpm
Insulation class	F (155 °C)
Protection class	IP 65 (with oil seal)
Ambient operating temperature	0 ÷ +40 °C
Ambient storage temperature	-40 ÷ +70 °C
Relative humidity	5 ÷ 85 %, non-condensing
Cooling type	Natural convective
Maximum operating altitude	Up to 3000 m above sea level (derating 1%/100m from 1000 onwards)
Temperature sensor	PTC1000
Shaft End	Smooth or keyed
Feedback	Resolver, TTL Encoder, Absolute Encoder (Hiperface, EnDat, EnDat Safe)
Bearing life	20.000 h under rated operation condition
Balancing quality grade	G 2.5 according to ISO 1940
Magnet material	NdFeB with epoxy coating
External coating	RAL 9005 black powder
Approvals	CE, Rohs, Reach, UL file: E216686

Item code identifier

Standard item codes

TC4 100 4B	17	4	1	M14	0	1
1	2	3	4	5	6	7
MODEL	TYPE OF WINDING	WINDING VOLTAGE	MECHANICAL ARRANGEMENT	FEEDBACK	BRAKE	RESERVED

MODEL		TYPE OF WINDING		WINDING VOLTAGE		MECHANICAL ARRANGEMENT		FEEDBACK		BRAKE		RESERVED
TC4	"+ size + torque"	15	Voltage 2/4	Winding Type 15		0	Shaft without key and without oil seal IP54	size 60		0	Without Brake	1
		16	Voltage 4 (only for size 60)	2	230Vac 3000rpm	1	Shaft without key and with oil seal IP65	A1	Absolute Multiturn Encoder SC.Hyperface 128 sin/cos (SKM36)	1	With Brake	
		17	Voltage 4 (no size 60)	4	400Vac 6000rpm	2	Keyed shaft without oil seal IP54	A12	Absolute Multiturn Encoder EnDAT 2.2 19bit (EQI1131)			
				Winding Type 16		3	Keyed shaft with oil seal IP65	A13	Absolute Multiturn Encoder EnDAT 2.2 19bit EQI1131 FS (safety)			
				4	400Vac 3000rpm			M14	Encoder TTL 4096ppr			
				Winding Type 17				M15	Encoder TTL 2048ppr			
				4	400Vac 3000rpm			R1	Resolver 2 poles			
								size 80				
								A1	Absolute Multiturn Encoder SC.Hyperface 128 sin/cos (SKM36)			
								A9	Absolute Multiturn Encoder SC.Hyperface 1024 sin/cos (SRM50)			
								A12	Absolute Multiturn Encoder EnDAT 2.2 19bit (EQI1131)			
								A13	Absolute Multiturn Encoder EnDAT 2.2 19bit EQI1131 FS (safety)			
								M14	Encoder TTL 4096ppr			
								M15	Encoder TTL 2048ppr			
								R1	Resolver 2 poles			
								size 100 - 130 - 150				
								A1	Absolute Multiturn Encoder SC.Hyperface 128 sin/cos (SKM36)			
								A9	Absolute Multiturn Encoder SC.Hyperface 1024 sin/cos (SRM50)			
								A12	Absolute Multiturn Encoder EnDAT 2.2 19bit (EQI1131)			
								A13	Absolute Multiturn Encoder EnDAT 2.2 19bit EQI1131 FS (safety)			
								A18	Absolute Singleturn Encoder EnDAT 2.2 25bit ECN1325 FS (safety)			
								A24	Absolute Singleturn Encoder EnDAT 2.2 19bit ECI1319 FS (safety)			
								M14	Encoder TTL 4096ppr			
								M15	Encoder TTL 2048ppr			
								R1	Resolver 2 poles			

	CT dedicated codes											
H8		24		30		80		47		99	
8		9		10		11		12		13	
CONNECTION		PTC		FLANGE		SHAFT		HIGH INERTIA		REAR COVER	
H7	Power connector size 1 6p and Signal connector 12p	24	Thermal sensor PTC 130°C	size 60		size 60		00	Std Inertia	99	Green cover
H8	Power connector size 1 6p and Signal connector 17p			00	Reg.diam. 50mm - pcd 70mm	00	14 x 30mm (d x L)	47	High Inertia		
H9	Power connector size 1,5 6p and Signal connector 17p			36	Reg.diam. 60mm - pcd 75mm	63	11 x 23mm (d x L)				
H10	Power connector size 1,5 6p and Signal connector 12p					71	14 x 30mm (d x L)				
				43	Reg.diam. 40mm - pcd 63mm	63	11 x 23mm (d x L)				
						71	14 x 30mm (d x L)				
				size 80		size 80					
				00	Reg.diam. 70mm - pcd 90mm	00	19 x 40mm (d x L)				
				36	Reg.diam. 60mm - pcd 75mm	71	14 x 30mm (d x L)				
						80	19 x 40mm (d x L)				
				size 100		size 100					
				00	Reg.diam. 95mm - pcd 115mm	00	19 x 40mm (d x L)				
				30	Reg.diam. 80mm - pcd 100mm	71	14 x 30mm (d x L)				
						80	19 x 40mm (d x L)				
				size 130		size 130					
				00	Reg.diam. 110mm - pcd 145mm	00	19 x 40mm (d x L)				
				34	Reg.diam. 95mm - pcd 115mm	80	19 x 40mm (d x L)				
				size 150		size 150					
				00	Reg. diam. 130mm - pcd 165mm	00	24 x 50mm (d x L)				

Product lineup

Servomotor Type	Nominal Power P_n (ref. to 3000 rpm)	Nominal Power P_n (ref. to 6000 rpm)	Nominal Torque M_n (ref. to 3000 rpm)	Peak Torque M_{max}	Continuous Working Speed n_M	Maximum Working Speed n_{Max}	Moment of Inertia	230 Vac	400 Vac
	[W]	[W]	[Nm]	[Nm]	[rpm]	[rpm]	[kg cm^2]		
TC4 60 2A	200	350	0.64	2.24	3000/6000	8000	0.223	√	√
TC4 60 2B	400	600	1.27	4.44	3000/6000	8000	0.414	√	√
TC4 80 3A	400	700	1.27	4.44	3000/6000	8000	0.79	√	√
TC4 80 3B	750	1100	2.38	8.33	3000/6000	8000	1.42	√	√
TC4 80 3C	1000	1300	3.18	11.10	3000/6000	8000	2.03	√	√
TC4 100 4A	1000	-	3.18	16.50	3000	6000	2.53	√	√
TC4 100 4B	2000	-	6.37	33.00	3000	6000	4.61	√	√
TC4 130 5F	1000	-	3.18	14.30	3000	4000	6.70	√	√
TC4 130 5G	1500	-	4.77	21.48	3000	4000	9.72	√	√
TC4 130 5H	2000	-	6.36	28.65	3000	4000	12.77	√	√
TC4 150 6A	2500	-	7.95	33.42	3000	4000	15.18	√	√
TC4 150 6B	4000	-	12.73	66.85	3000	4000	27.68	√	√
TC4 150 6C	6000	-	19.10	100.27	3000	4000	40.17	√	√

TC640

Frame size 60 2A

Ratings and specifications

		TYPE OF WINDING		
		15	15	16
ELECTRICAL DATA	**UNIT**			
Poles number	Nr		10,00	
Continuous stall torque (1)	Nm		0,67	
Peak torque	Nm		2,24	
Nominal torque	Nm	0,64	0,64	0,64
Rated Voltage	V	230 Vac	400 Vac	
Nominal power	W	200	350	200
Continuous stall current	Arms	0,74	0,74	0,56
Maximum current	Arms	2,74	2,74	2,08
Nominal current	Arms	0,73	0,73	0,55
Base speed at Cmax	rpm	2250	4700	3400
Nominal working speed	rpm	3000	4700	3000
Maximum working speed	rpm	3700	6800	5150
Torque costant ± 10%	Nm/Arms	0,91	0,91	1,20
Voltage costant ± 10%	V/krpm	55,00	55,00	72,50
Winding resistance ± 10% @25°C (ph/ph)	Ohm	31,81	31,81	52,39
Winding inductance ± 10% (ph/ph)	mH	30,16	30,16	52,74
Electrical time constant	ms	0,95	0,95	1,01
Thermal resistance	°C/W		2,59	
Operating temperature	°C		0 ÷ 40	
Protection degree	IP		65 (*)	
Insulation class			F	
MECHANICAL DATA	**UNIT**			
Rotor inertia without holding brake	kg cm^2		0,22	
Rotor inertia with holding brake	kg cm^2		0,24	
Max theoretical acceleration (1)	rad/s^2		100488	
Mechanical time constant (1)	ms	0,86	0,86	0,81
Max radial shaft load @3000/6000rpm	N		260 / 200	
Max axial shaft load @3000/6000rpm	N		42 / 32	
Mass without holding brake	kg		0,92	
Mass with holding brake	kg		1,44	

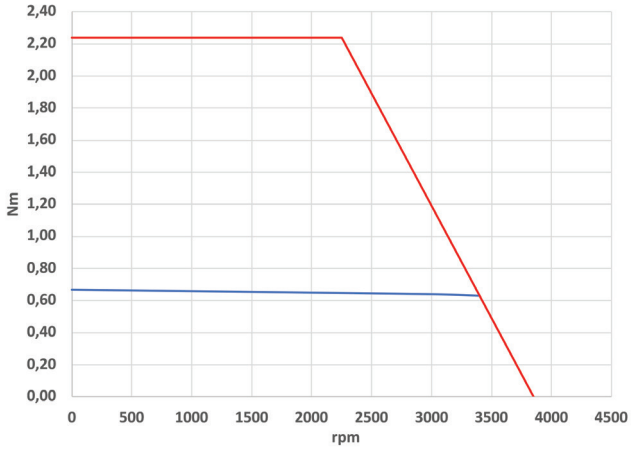
(1) Without holding brake.
(*) With oil seal mounted on the flange.

Rated output with 250 x 250 x 12 mm metallic heat sink flange coupling
Derating must be considered if the oil seal is applied.

Torque/speed charts

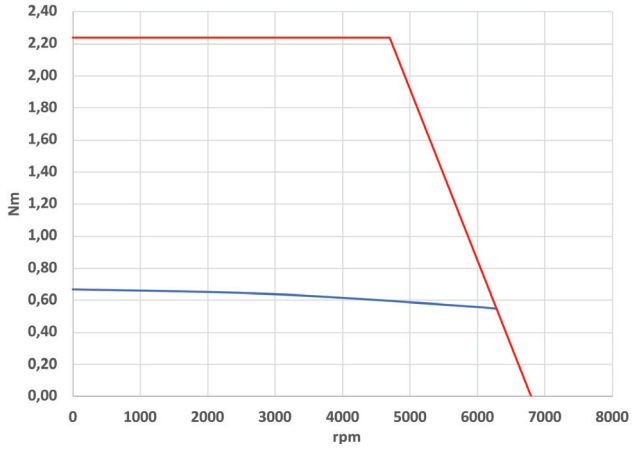
TC4 60 2A 15 2

Operative curves at 230 Vac — Cn — Cmax



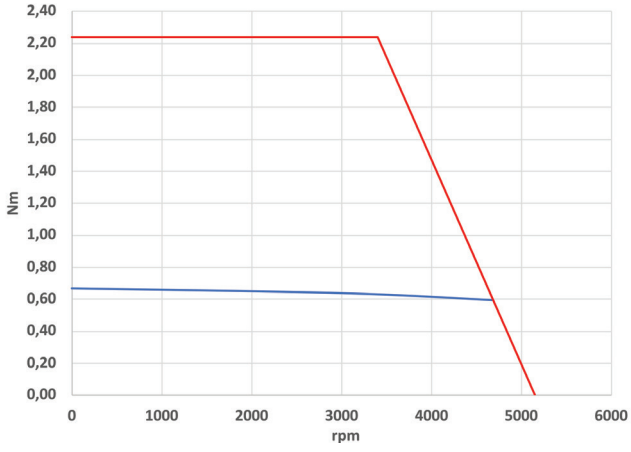
TC4 60 2A 15 4

Operative curves at 400 Vac — Cn — Cmax



TC4 60 2A 16 4

Operative curves at 400 Vac — Cn — Cmax



Frame size 60 2B

Ratings and specifications

		TYPE OF WINDING		
		15	15	16
ELECTRICAL DATA	**UNIT**			
Poles number	Nr		10	
Continuous stall torque (1)	Nm		1,38	
Peak torque	Nm		4,44	
Nominal torque	Nm	1,27	0,95	1,27
Rated Voltage	V	230 Vac	400 Vac	
Nominal power	W	400	600	400
Continuous stall current	Arms	1,52	1,52	1,15
Maximum current	Arms	5,42	5,42	4,11
Nominal current	Arms	1,44	1,10	1,11
Base speed at Cmax	rpm	2500	4800	3500
Nominal working speed	rpm	3000	6000	3000
Maximum working speed	rpm	3700	6800	5150
Torque costant ± 10%	Nm/Arms	0,91	0,91	1,20
Voltage costant ± 10%	V/krpm	55,00	55,00	72,50
Winding resistance ± 10% @25°C (ph/ph)	Ohm	12,60	12,60	20,93
Winding inductance ± 10% (ph/ph)	mH	16,83	16,83	29,58
Electrical time constant	ms	1,34	1,34	1,41
Thermal resistance	°C/W		1,52	
Operating temperature	°C		0 ÷ 40	
Protection degree	IP		65 (*)	
Insulation class			F	
MECHANICAL DATA	**UNIT**			
Rotor inertia without holding brake	kg cm^2		0,41 (0,78)**	
Rotor inertia with holding brake	kg cm^2		0,43 (0,80)**	
Max theoretical acceleration (1)	rad/s^2		107246	
Mechanical time constant (1)	ms	0,59	0,59	0,56
Max radial shaft load @3000/6000rpm	N		260/200	
Max axial shaft load @3000/6000rpm	N		42 / 32	
Mass without holding brake	kg		1,33	
Mass with holding brake	kg		1,85	

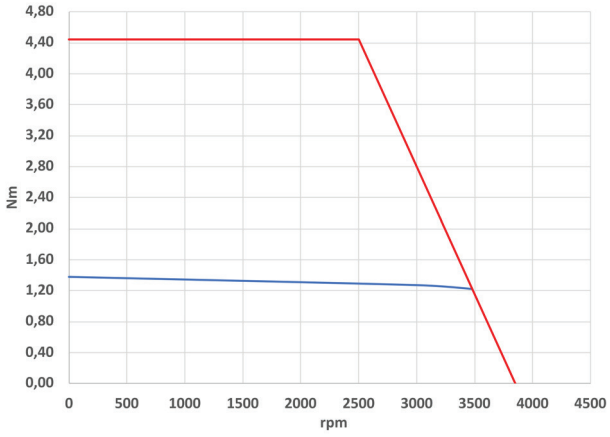
((1) Without holding brake.
(*) With oil seal mounted on the flange.
(**) With High Inertia Code = 47

Rated output with 250 x 250 x 12 mm metallic heat sink flange coupling
Derating must be considered if the oil seal is applied.

Torque/speed charts

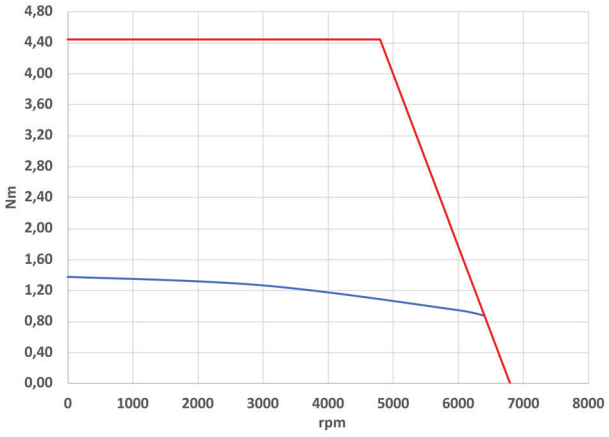
TC4 60 2B 15 2

Operative curves at 230 Vac — Cn — Cmax



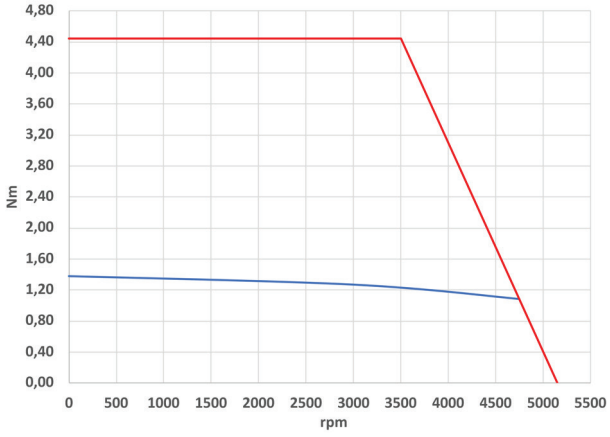
TC4 60 2B 15 4

Operative curves at 400 Vac — Cn — Cmax



TC4 60 2B 16 4

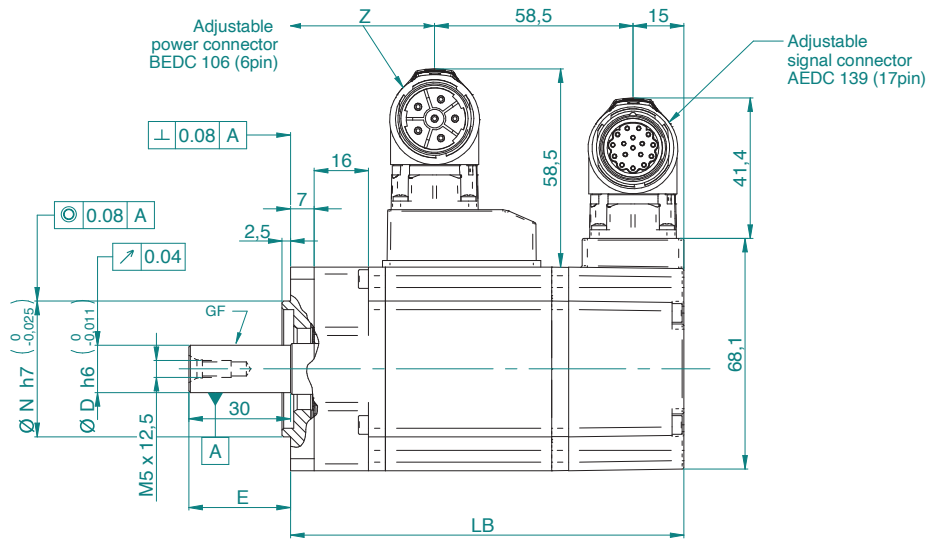
Operative curves at 400 Vac — Cn — Cmax

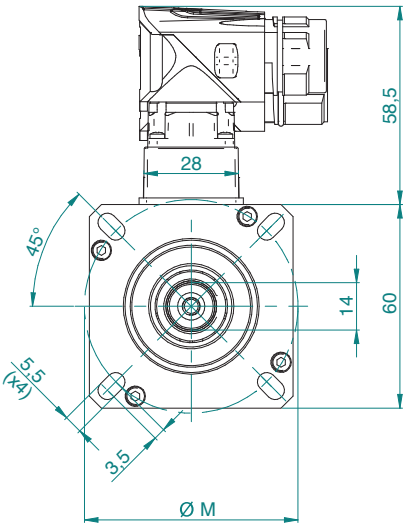


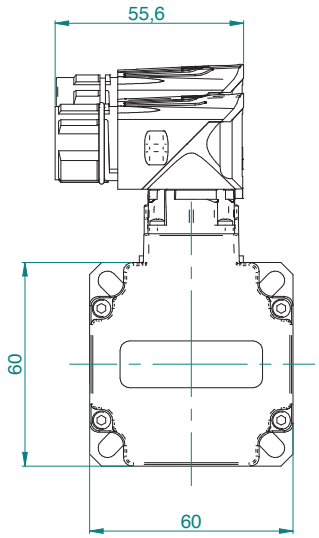
External dimensions

TC4 60 2A

TC4 60 2B







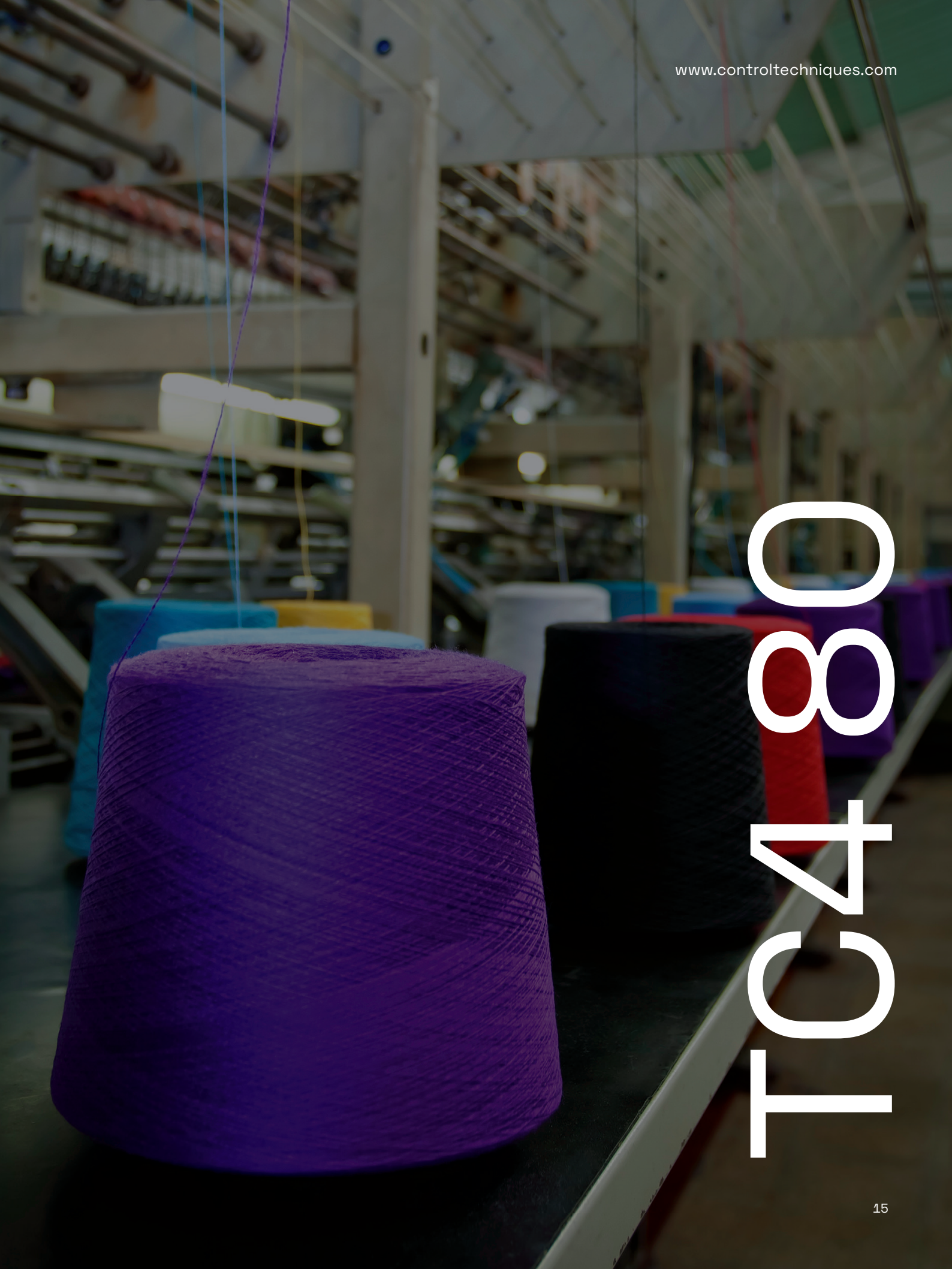
Model	Shaft Code	Shaft diameter	Shaft lenght	Key H x W x L
		D (mm)	E (mm)	GF (mm)
2A / 2B	00	14,0	30,0	4 x 4 x 18
	63	11,0	23,0	
	71	14,0	30,0	

Model	Feedback	Flange code	Unbraked lenght		Braked lenght	
			LB (mm)*	Z (mm)	LB (mm)*	Z (mm)
2A	A12 - A13 M14 M15 - R1	00	96,0	22,5	126,0	22,5
		36	100,0	26,5	130,0	26,5
		43	116,0	42,5	146,0	42,5
2B	A12 - A13 M14 M15 - R1	00	139,0	65,5	169,0	65,5
		36	143,0	69,5	173,0	69,5
		43	159,0	85,5	189,0	85,5

* with feedback A1 LB = +10mm (Z remain unchanged)
All the above values must be increased of +20mm if high inertia code 47 is used

Flange Code	Register diameter	Fixing hole PCD
	N (mm)	M (mm)
00*	50	70
36**	60	75
43**	40	63

* mandatory shaft code 00
** for shaft 14x30mm, mandatory shaft code 71



TC480

Frame size 80 3A

Ratings and specifications

		TYPE OF WINDING		
		15	15	17
ELECTRICAL DATA	**UNIT**			
Poles number	Nr		10	
Continuous stall torque (1)	Nm		1,38	
Peak torque	Nm		4,44	
Nominal torque	Nm	1,27	1,12	1,27
Rated Voltage	V	230 Vac	400 Vac	
Nominal power	W	400	700	400
Continuous stall current	Arms	1,52	1,52	0,86
Maximum current	Arms	5,42	5,42	3,08
Nominal current	Arms	1,44	1,30	0,82
Base speed at Cmax	rpm	2500	4800	2500
Nominal working speed	rpm	3000	6000	3000
Maximum working speed	rpm	3700	6800	3700
Torque costant ± 10%	Nm/Arms	0,91	0,91	1,60
Voltage costant ± 10%	V/krpm	55,00	55,00	96,70
Winding resistance ± 10% @25°C (ph/ph)	Ohm	9,45	9,45	30,50
Winding inductance ± 10% (ph/ph)	mH	18,40	18,4	56,9
Electrical time constant	ms	1,95	1,95	1,87
Thermal resistance	°C/W		1,97	
Operating temperature	°C		0 ÷ 40	
Protection degree	IP		65 (*)	
Insulation class			F	
MECHANICAL DATA	**UNIT**			
Rotor inertia without holding brake	kg cm^2		0,79	
Rotor inertia with holding brake	kg cm^2		0,86	
Max theoretical acceleration (1)	rad/s^2		56202	
Mechanical time constant (1)	ms	0,92	0,92	0,94
Max radial shaft load @3000/6000rpm	N		440 / 350	
Max axial shaft load @3000/6000rpm	N		115 / 90	
Mass without holding brake	kg		1,83	
Mass with holding brake	kg		2,62	

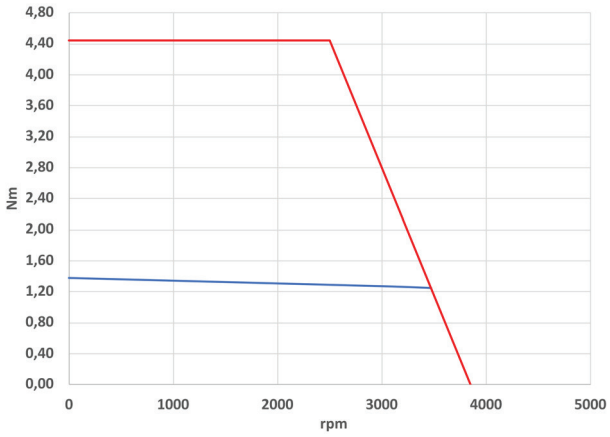
(1) Without holding brake.
(*) With oil seal mounted on the flange.

Rated output with 250 x 250 x 12 mm metallic heat sink flange coupling
Derating must be considered if the oil seal is applied.

Torque/speed charts

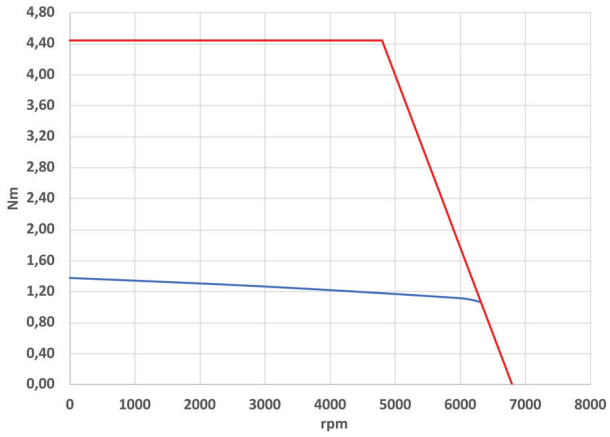
TC4 80 3A 15 2

Operative curves at 230 Vac — Cn — Cmax



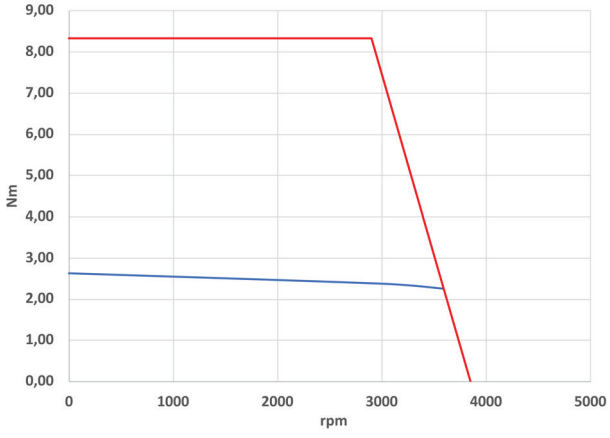
TC4 80 3A 15 4

Operative curves at 400 Vac — Cn — Cmax



TC4 80 3A 17 4

Operative curves at 400 Vac — Cn — Cmax



Frame size 80 3B

Ratings and specifications

		TYPE OF WINDING		
		15	15	17
ELECTRICAL DATA	**UNIT**			
Poles number	Nr		10	
Continuous stall torque (1)	Nm		2,64	
Peak torque	Nm		8,33	
Nominal torque	Nm	2,38	1,75	2,38
Rated Voltage	V	230 Vac	400 Vac	
Nominal power	W	750	1100	750
Continuous stall current	Arms	2,90	2,90	1,65
Maximum current	Arms	10,17	10,17	5,79
Nominal current	Arms	2,70	2,02	1,53
Base speed at Cmax	rpm	2900	5300	2900
Nominal working speed	rpm	3000	6000	3000
Maximum working speed	rpm	3700	6800	3700
Torque costant ± 10%	Nm/Arms	0,91	0,91	1,60
Voltage costant ± 10%	V/krpm	55,00	55,00	96,70
Winding resistance ± 10% @25°C (ph/ph)	Ohm	3,70	3,70	11,80
Winding inductance ± 10% (ph/ph)	mH	7,70	7,70	23,30
Electrical time constant	ms	2,08	2,08	1,97
Thermal resistance	°C/W		1,35	
Operating temperature	°C		0 ÷ 40	
Protection degree	IP		65 (*)	
Insulation class			F	
MECHANICAL DATA	**UNIT**			
Rotor inertia without holding brake	kg cm^2		1,42	
Rotor inertia with holding brake	kg cm^2		1,50	
Max theoretical acceleration (1)	rad/s^2		58661	
Mechanical time constant (1)	ms	0,63	0,63	0,64
Max radial shaft load @3000/6000rpm	N		440 / 350	
Max axial shaft load @3000/6000rpm	N		115 / 90	
Mass without holding brake	kg		2,76	
Mass with holding brake	kg		3,37	

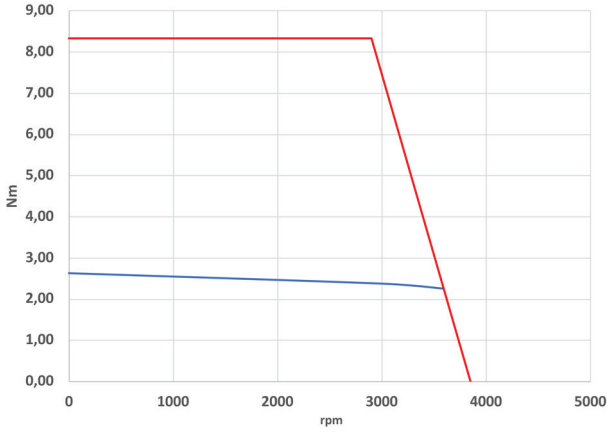
(1) Without holding brake.
(*) With oil seal mounted on the flange.

Rated output with 250 x 250 x 12 mm metallic heat sink flange coupling
Derating must be considered if the oil seal is applied.

Torque/speed charts

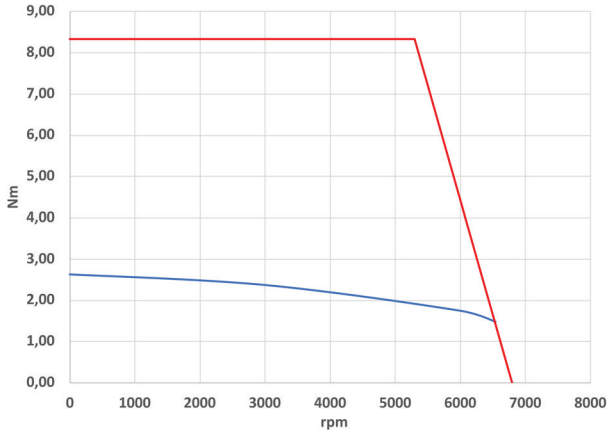
TC4 80 3B 15 2

Operative curves at 230 Vac — Cn — Cmax



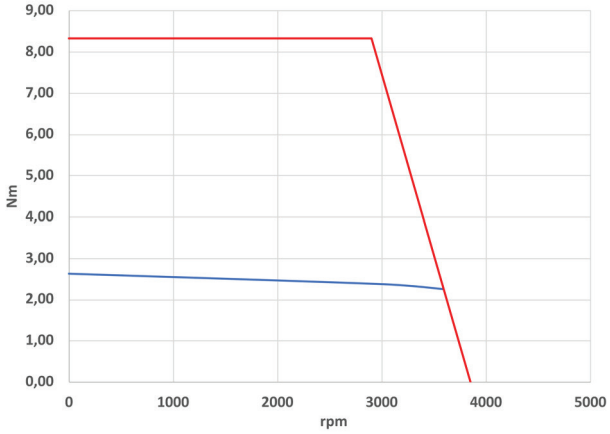
TC4 80 3B 15 4

Operative curves at 400 Vac — Cn — Cmax



TC4 80 3B 17 4

Operative curves at 400 Vac — Cn — Cmax



Frame size 80 3C

Ratings and specifications

		TYPE OF WINDING		
		15	15	17
ELECTRICAL DATA	**UNIT**			
Poles number	Nr		10	
Continuous stall torque (1)	Nm		3,54	
Peak torque	Nm		11,1	
Nominal torque	Nm	3,18	2,10	3,18
Rated Voltage	V	230 Vac	400 Vac	
Nominal power	W	1000	1300	1000
Continuous stall current	Arms	3,89	3,89	2,21
Maximum current	Arms	13,56	13,56	7,71
Nominal current	Arms	3,60	2,43	2,05
Base speed at Cmax	rpm	2900	5400	2900
Nominal working speed	rpm	3000	6000	3000
Maximum working speed	rpm	3700	6800	3700
Torque costant ± 10%	Nm/Arms	0,91	0,91	1,60
Voltage costant ± 10%	V/krpm	55,00	55,00	96,70
Winding resistance ± 10% @25°C (ph/ph)	Ohm	2,19	2,19	6,80
Winding inductance ± 10% (ph/ph)	mH	5,95	5,95	18,20
Electrical time constant	ms	2,72	2,72	2,68
Thermal resistance	°C/W		1,25	
Operating temperature	°C		0 ÷ 40	
Protection degree	IP		65 (*)	
Insulation class			F	
MECHANICAL DATA	**UNIT**			
Rotor inertia without holding brake	kg cm^2		2,03	
Rotor inertia with holding brake	kg cm^2		2,11	
Max theoretical acceleration (1)	rad/s^2		54679	
Mechanical time constant (1)	ms	0,53	0,53	0,54
Max radial shaft load @3000/6000rpm	N		440 / 350	
Max axial shaft load @3000/6000rpm	N		115 / 90	
Mass without holding brake	kg		3,25	
Mass with holding brake	kg		3,87	

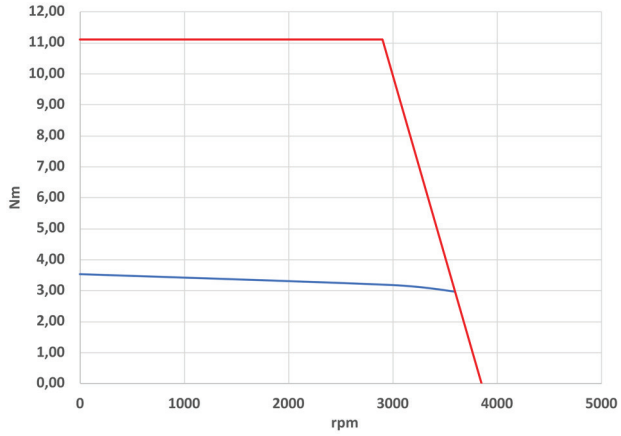
(1) Without holding brake.
(*) With oil seal mounted on the flange.

Rated output with 250 x 250 x 12 mm metallic heat sink flange coupling
Derating must be considered if the oil seal is applied.

Torque/speed charts

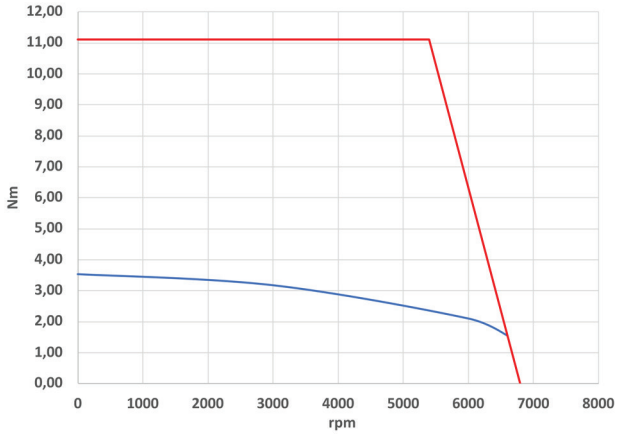
TC4 80 3C 15 2

Operative curves at 230 Vac — Cn — Cmax



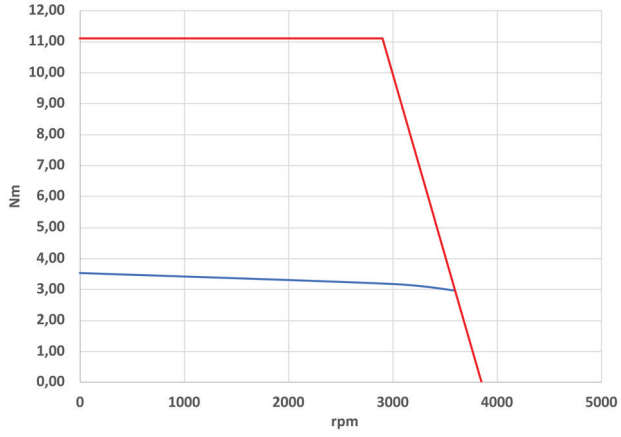
TC4 80 3C 15 4

Operative curves at 400 Vac — Cn — Cmax



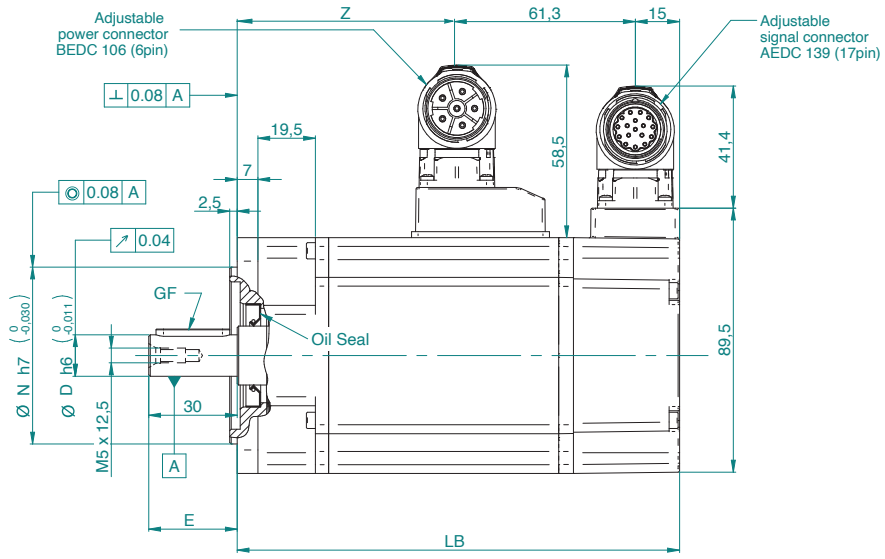
TC4 80 3C 17 4

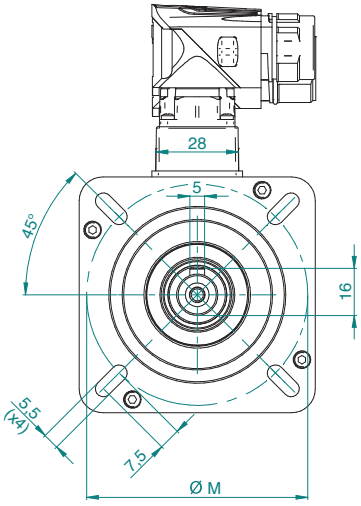
Operative curves at 400 Vac — Cn — Cmax

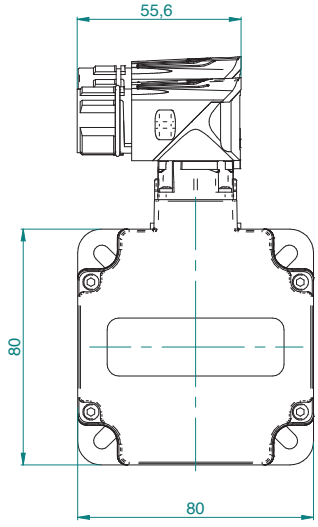


External Dimensions

TC4 80 3A
TC4 80 3B
TC4 80 3C







Model	Shaft Code	Shaft diameter	Shaft lenght	Key H x W x L
		D (mm)	E (mm)	GF (mm)
3A / 3B 3C	00	14,0	30,0	4 x 4 x 18
	63	11,0	23,0	
	71	14,0	30,0	

Model	Feedback	Flange code	Unbraked lenght		Braked lenght	
			LB (mm)*	Z (mm)	LB (mm)*	Z (mm)
3A	A12 - A13 M14 M15 - R1	00	108,0	32,5	140,0	32,5
		36	128,0	52,5	160,0	52,5
3B	A12 - A13 M14 M15 - R1	00	130,0	54,5	162,0	54,5
		36	150,0	74,5	182,0	74,5
3C	A12 - A13 M14 M15 - R1	00	142,0	66,0	174,0	66,0
		36	162,0	86,0	194,0	86,0

* with feedback A1 LB = +10mm (Z remain unchanged)
* with feedback A9 LB = +20mm (Z remain unchanged)

Flange Code	Register diameter	Fixing hole PCD
	N (mm)	M (mm)
00*	70	90
36**	60	75

* mandatory shaft code 00
** for shaft 19x40mm, mandatory shaft code 80

TC4400

Frame size 100 4A

Ratings and specifications

		TYPE OF WINDING		
		15	15	17
ELECTRICAL DATA	**UNIT**			
Poles number	Nr		10	
Continuous stall torque (1)	Nm		4,00	
Peak torque	Nm		16,5	
Nominal torque	Nm	3,18	3,18	3,18
Rated Voltage	V	230 Vac	400 Vac	
Nominal power	W	1000	1000	1000
Continuous stall current	Arms	4,40	4,40	2,50
Maximum current	Arms	21,34	21,34	12,14
Nominal current	Arms	3,76	3,76	2,14
Base speed at Cmax	rpm	1450	2600	1450
Nominal working speed	rpm	3000	3000	3000
Maximum working speed	rpm	3700	6000	3700
Torque costant ± 10%	Nm/Arms	0,91	0,91	1,60
Voltage costant ± 10%	V/krpm	55,00	55,00	96,70
Winding resistance ± 10% @25°C (ph/ph)	Ohm	1,82	1,82	5,12
Winding inductance ± 10% (ph/ph)	mH	13,50	13,50	41,30
Electrical time constant	ms	7,42	7,42	8,07
Thermal resistance	°C/W		1,23	
Operating temperature	°C		0 ÷ 40	
Protection degree	IP		65 (*)	
Insulation class			F	
MECHANICAL DATA	**UNIT**			
Rotor inertia without holding brake	kg cm^2		2,53 (3.56)**	
Rotor inertia with holding brake	kg cm^2		2,65 (3.68)**	
Max theoretical acceleration (1)	rad/s^2		65217	
Mechanical time constant (1)	ms	0,56	0,56	0,51
Max radial shaft load @3000/6000rpm	N		690 / 580	
Max axial shaft load @3000/6000rpm	N		245 / 220	
Mass without holding brake	kg		5,55	
Mass with holding brake	kg		6,60	

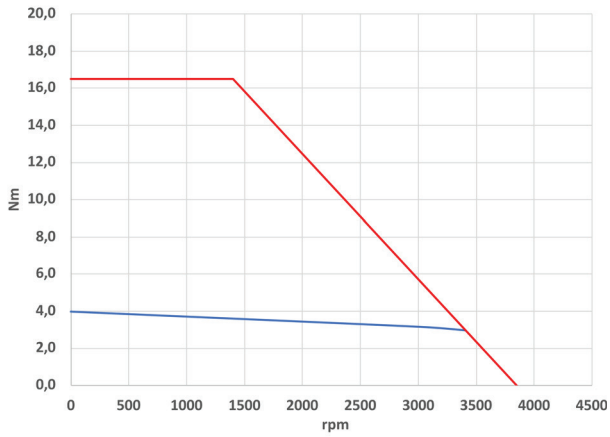
((1) Without holding brake.
(*) With oil seal mounted on the flange.
(**) With High Inertia Code = 47

Rated output with 300 x 300 x 20 mm metallic heat sink flange.
Derating must be considered if the oil seal is applied.

Torque/speed charts

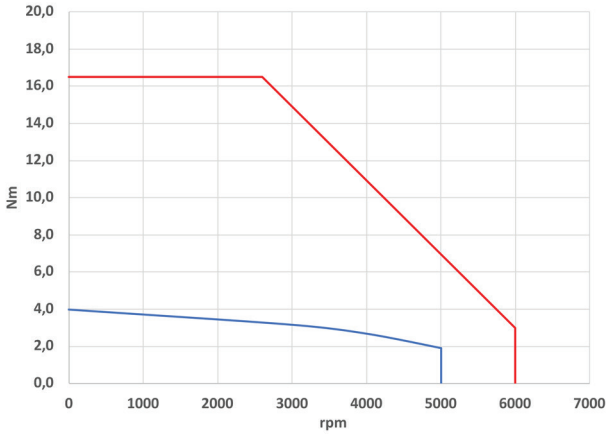
TC4 100 4A 15 2

Operative curves at 230 Vac — Cn — Cmax



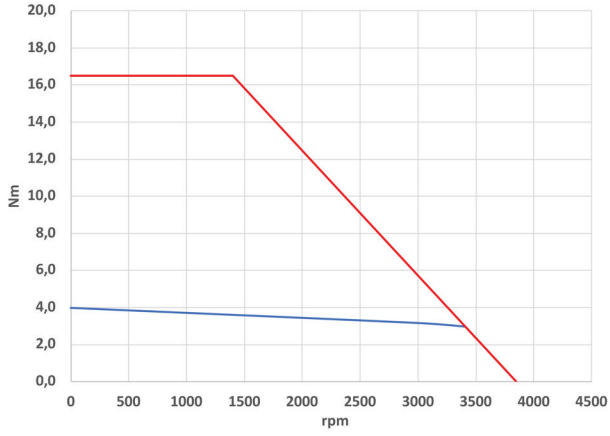
TC4 100 4A 15 4

Operative curves at 400 Vac — Cn — Cmax



TC4 100 4A 17 4

Operative curves at 400 Vac — Cn — Cmax



Frame size 100 4B

Ratings and specifications

		TYPE OF WINDING		
		15	15	17
ELECTRICAL DATA	**UNIT**			
Poles number	Nr		10	
Continuous stall torque (1)	Nm		8,30	
Peak torque	Nm		33,0	
Nominal torque	Nm	6,37	6,37	6,37
Rated Voltage	V	230 Vac	400 Vac	
Nominal power	W	2000	2000	2000
Continuous stall current	Arms	9,12	9,12	5,19
Maximum current	Arms	42,68	42,68	24,27
Nominal current	Arms	7,53	7,53	4,28
Base speed at Cmax	rpm	1850	3350	1850
Nominal working speed	rpm	3000	3000	3000
Maximum working speed	rpm	3700	6000	3700
Torque costant ± 10%	Nm/Arms	0,91	0,91	1,60
Voltage costant ± 10%	V/krpm	55,00	55,00	96,70
Winding resistance ± 10% @25°C (ph/ph)	Ohm	0,64	0,64	2,01
Winding inductance ± 10% (ph/ph)	mH	4,87	4,87	15,14
Electrical time constant	ms	7,61	7,61	7,53
Thermal resistance	°C/W		0,78	
Operating temperature	°C		0 ÷ 40	
Protection degree	IP		65 (*)	
Insulation class			F	
MECHANICAL DATA	**UNIT**			
Rotor inertia without holding brake	kg cm^2		4,61 (5.63)**	
Rotor inertia with holding brake	kg cm^2		4,73 (5.70)**	
Max theoretical acceleration (1)	rad/s^2		71583	
Mechanical time constant (1)	ms	0,35	0,35	0,36
Max radial shaft load @3000/6000rpm	N		690 / 580	
Max axial shaft load @3000/6000rpm	N		245 / 220	
Mass without holding brake	kg		8,09	
Mass with holding brake	kg		9,14	

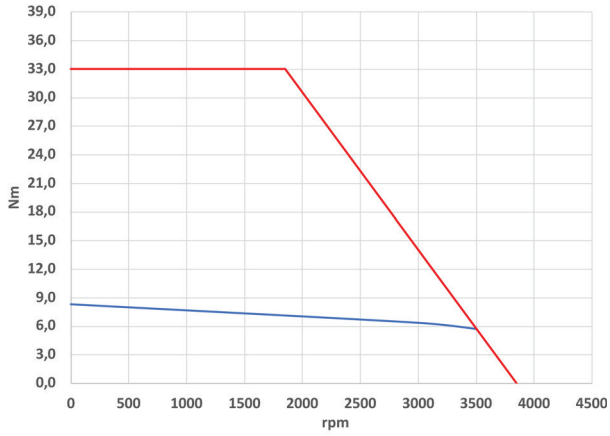
((1) Without holding brake.
(*) With oil seal mounted on the flange.
(**) With High Inertia Code = 47

Rated output with 300 x 300 x 20 mm metallic heat sink flange.
Derating must be considered if the oil seal is applied.

Torque/speed charts

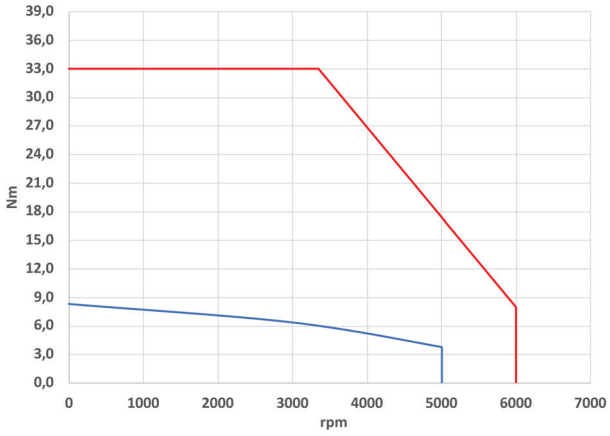
TC4 100 4B 15 2

Operative curves at 230 Vac — Cn — Cmax



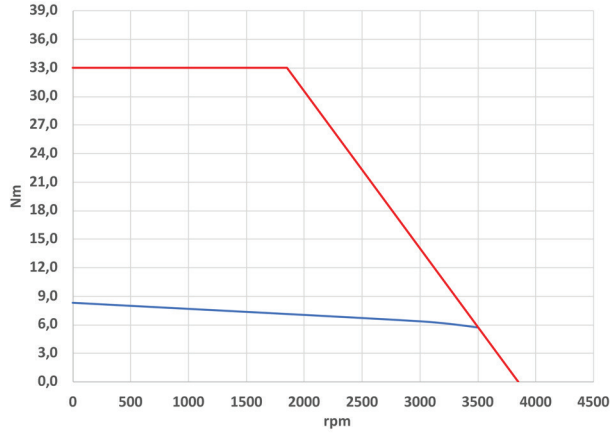
TC4 100 4B 15 4

Operative curves at 400 Vac — Cn — Cmax



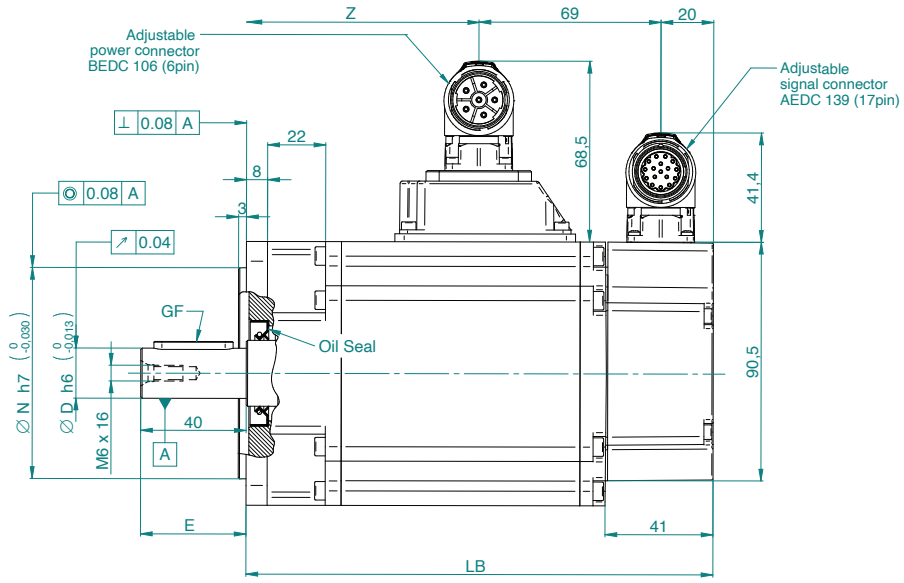
TC4 100 4B 17 4

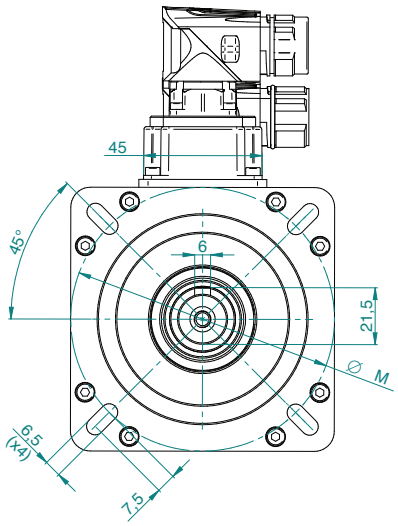
Operative curves at 400 Vac — Cn — Cmax

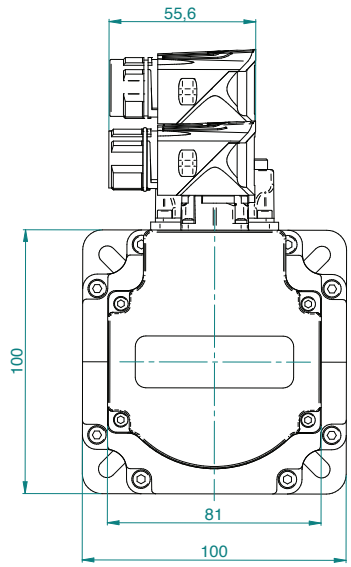


External Dimensions

TC4 100 4A
TC4 100 4B







Model	Shaft Code	Shaft diameter	Shaft lenght	Key H x W x L
		D (mm)	E (mm)	GF (mm)
4A / 4B	00	19,0	40,0	6 x 6 x 30
	71	14,0	30,0	
	80	19,0	40,0	

Model	Feedback	Flange code	Unbraked lenght		Braked lenght	
			LB (mm)*	Z (mm)	LB (mm)*	Z (mm)
4A	A12 - A13 M14 - M15	00	158,0	69,0	188,0	69,0
		30	177,0	88,0	207,0	88,0
		00	203,0	114,0	233,0	114,0
4B	A12 - A13 M14 - M15	30	222,0	133,0	252,0	133,0
		36	143,0	69,5	173,0	69,5
		43	159,0	85,5	189,0	85,5

* with feedback A1, A9, A24, R1 LB = +15mm (Z remain unchanged)
* with feedback A18 LB = +30mm (Z remain unchanged)
All the above values must be increased of +20mm if high inertia code 47 is used

Flange Code	Register diameter	Fixing hole PCD
	N (mm)	M (mm)
00*	95	115
30**	80	100

* mandatory shaft code 00
** for shaft 14x30mm, mandatory shaft code 71

TC4 130

Frame size 130 5F

Ratings and specifications

		TYPE OF WINDING		
		15	15	17
ELECTRICAL DATA	**UNIT**			
Poles number	Nr		10	
Continuous stall torque (1)	Nm		4,77	
Peak torque	Nm		14,30	
Nominal torque	Nm	3,18	3,18	3,18
Rated Voltage	V	230 Vac	400 Vac	
Nominal power	W	1000	1000	1000
Continuous stall current	Arms	5,24	5,24	2,98
Maximum current	Arms	17,47	17,47	9,93
Nominal current	Arms	3,76	3,76	2,14
Base speed at Cmax	rpm	2200	3800	2200
Nominal working speed	rpm	3000	3000	3000
Maximum working speed	rpm	3700	4000	3700
Torque costant ± 10%	Nm/Arms	0,91	0,91	1,60
Voltage costant ± 10%	V/krpm	55,00	55,00	96,70
Winding resistance ± 10% @25°C (ph/ph)	Ohm	0,87	0,87	2,64
Winding inductance ± 10% (ph/ph)	mH	9,37	9,37	29,20
Electrical time constant	ms	10,77	10,77	11,06
Thermal resistance	°C/W		-	
Operating temperature	°C		0 ÷ 40	
Protection degree	IP		65 (*)	
Insulation class			F	
MECHANICAL DATA	**UNIT**			
Rotor inertia without holding brake	kg cm^2		6,70	
Rotor inertia with holding brake	kg cm^2		7,95	
Max theoretical acceleration (1)	rad/s^2		21343,00	
Mechanical time constant (1)	ms	0,70	0,70	0,69
Max radial shaft load @3000/6000rpm	N		1200	
Max axial shaft load @3000/6000rpm	N		230	
Mass without holding brake	kg		7,35	
Mass with holding brake	kg		8,87	

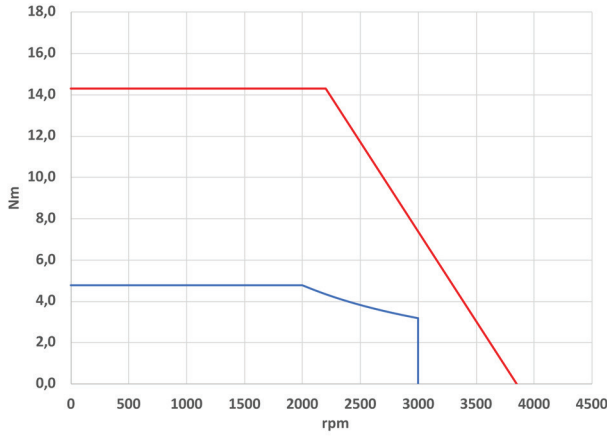
((1) Without holding brake.
(*) With oil seal mounted on the flange.

Rated output with 400 x 400 x 20 mm metallic heat sink flange.
Derating must be considered if the oil seal is applied.

Torque/speed charts

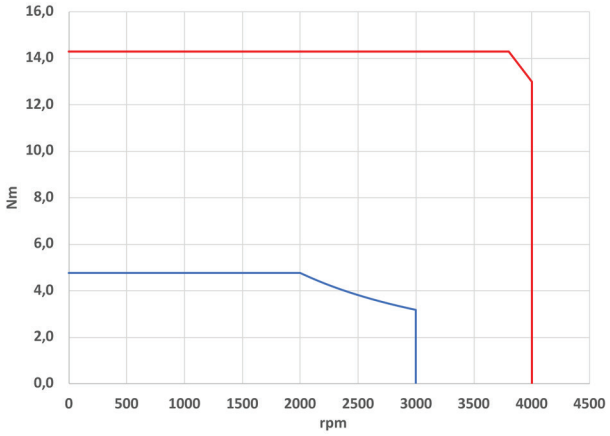
TC4 130 5F 15 2

Operative curves at 230 Vac — Cn — Cmax



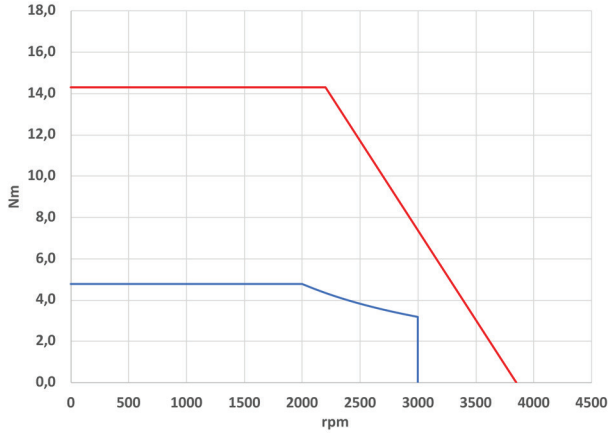
TC4 130 5F 15 4

Operative curves at 400 Vac — Cn — Cmax



TC4 130 5F 17 4

Operative curves at 400 Vac — Cn — Cmax



Frame size 130 5G

Ratings and specifications

		TYPE OF WINDING		
		15	15	17
ELECTRICAL DATA	UNIT			
Poles number	Nr		10	
Continuous stall torque (1)	Nm		7,16	
Peak torque	Nm		21,48	
Nominal torque	Nm	4,78	4,78	4,78
Rated Voltage	V	230 Vac	400 Vac	
Nominal power	W	1500,00	1500,00	1500,00
Continuous stall current	Arms	7,87	7,87	4,48
Maximum current	Arms	26,20	26,20	14,92
Nominal current	Arms	5,64	5,64	3,21
Base speed at Cmax	rpm	2400	4000	2400
Nominal working speed	rpm	3000	3000	3000
Maximum working speed	rpm	3700	4000	3700
Torque costant ± 10%	Nm/Arms	0,91	0,91	1,60
Voltage costant ± 10%	V/krpm	55,00	55,00	96,70
Winding resistance ± 10% @25°C (ph/ph)	Ohm	0,47	0,47	1,64
Winding inductance ± 10% (ph/ph)	mH	5,34	5,34	20,66
Electrical time constant	ms	11,36	11,36	12,60
Thermal resistance	°C/W		-	
Operating temperature	°C		0 ÷ 40	
Protection degree	IP		65 (*)	
Insulation class			F	
MECHANICAL DATA	UNIT			
Rotor inertia without holding brake	kg cm^2		9,72	
Rotor inertia with holding brake	kg cm^2		10,98	
Max theoretical acceleration (1)	rad/s^2		22098,00	
Mechanical time constant (1)	ms	0,58	0,58	0,53
Max radial shaft load @3000/6000rpm	N		1200	
Max axial shaft load @3000/6000rpm	N		230	
Mass without holding brake	kg		10,54	
Mass with holding brake	kg		12,68	

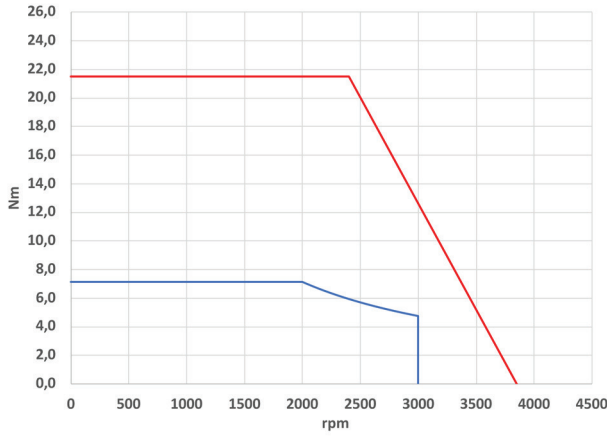
((1) Without holding brake.
(*) With oil seal mounted on the flange.

Rated output with 400 x 400 x 20 mm metallic heat sink flange.
Derating must be considered if the oil seal is applied.

Torque/speed charts

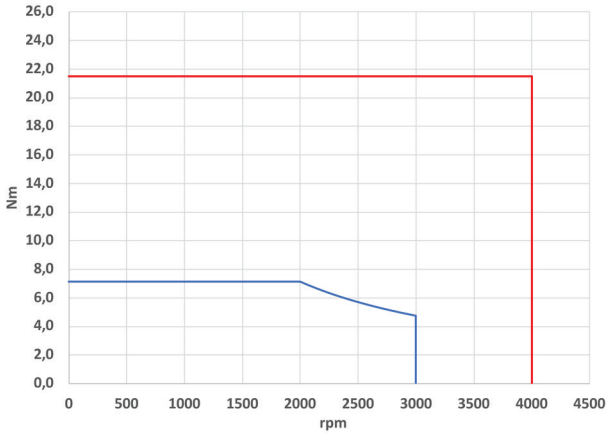
TC4 130 5G 15 2

Operative curves at 230 Vac — Cn — Cmax



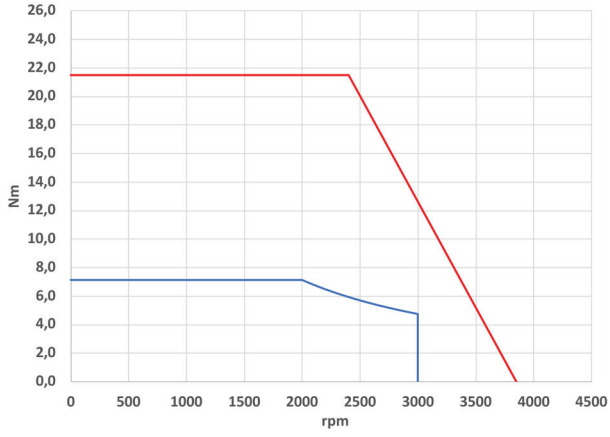
TC4 130 5G 15 4

Operative curves at 400 Vac — Cn — Cmax



TC4 130 5G 17 4

Operative curves at 400 Vac — Cn — Cmax



Frame size 130 5H

Ratings and specifications

		TYPE OF WINDING		
		15	15	17
ELECTRICAL DATA	**UNIT**			
Poles number	Nr		10	
Continuous stall torque (1)	Nm		9,55	
Peak torque	Nm		28,65	
Nominal torque	Nm	6,37	6,37	6,37
Rated Voltage	V	230 Vac	400 Vac	
Nominal power	W	2000,00	2000,00	2000,00
Continuous stall current	Arms	10,50	10,50	5,97
Maximum current	Arms	35,00	35,00	19,90
Nominal current	Arms	7,53	7,53	4,28
Base speed at Cmax	rpm	2100	3650	2100
Nominal working speed	rpm	3000	3000	3000
Maximum working speed	rpm	3700	4000	3700
Torque costant ± 10%	Nm/Arms	0,91	0,91	1,60
Voltage costant ± 10%	V/krpm	55,00	55,00	96,70
Winding resistance ± 10% @25°C (ph/ph)	Ohm	0,38	0,38	1,06
Winding inductance ± 10% (ph/ph)	mH	5,00	5,00	15,40
Electrical time constant	ms	13,16	13,16	14,53
Thermal resistance	°C/W		-	
Operating temperature	°C		0 ÷ 40	
Protection degree	IP		65 (*)	
Insulation class			F	
MECHANICAL DATA	**UNIT**			
Rotor inertia without holding brake	kg cm^2		12,77	
Rotor inertia with holding brake	kg cm^2		14,04	
Max theoretical acceleration (1)	rad/s^2		22435,00	
Mechanical time constant (1)	ms	0,58	0,58	0,53
Max radial shaft load @3000/6000rpm	N		1200	
Max axial shaft load @3000/6000rpm	N		230	
Mass without holding brake	kg		10,54	
Mass with holding brake	kg		12,68	

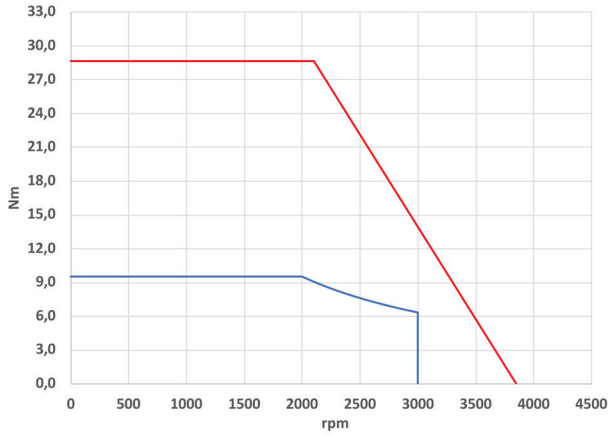
((1) Without holding brake.
(*) With oil seal mounted on the flange.

Rated output with 400 x 400 x 20 mm metallic heat sink flange.
Derating must be considered if the oil seal is applied.

Torque/speed charts

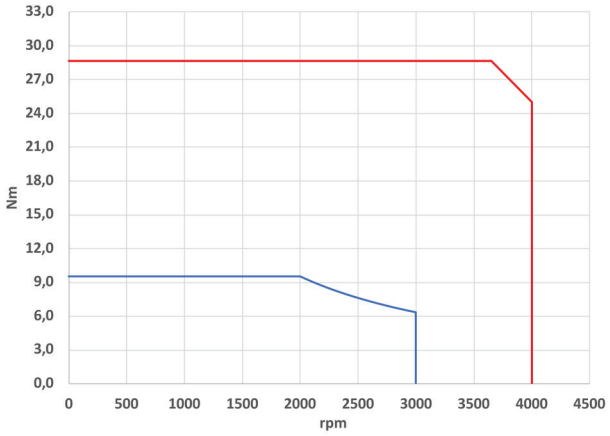
TC4 130 5H 15 2

Operative curves at 230 Vac — Cn — Cmax



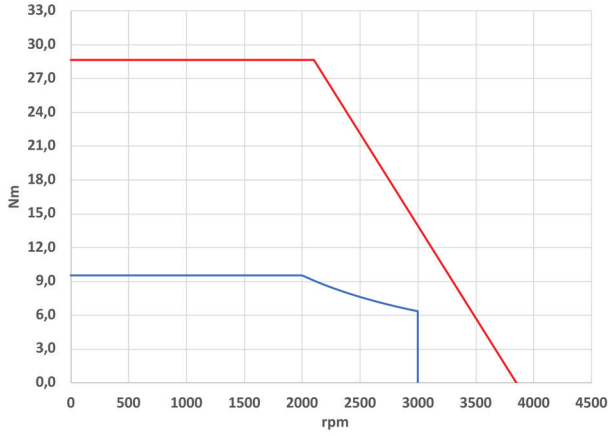
TC4 130 5H 15 4

Operative curves at 400 Vac — Cn — Cmax



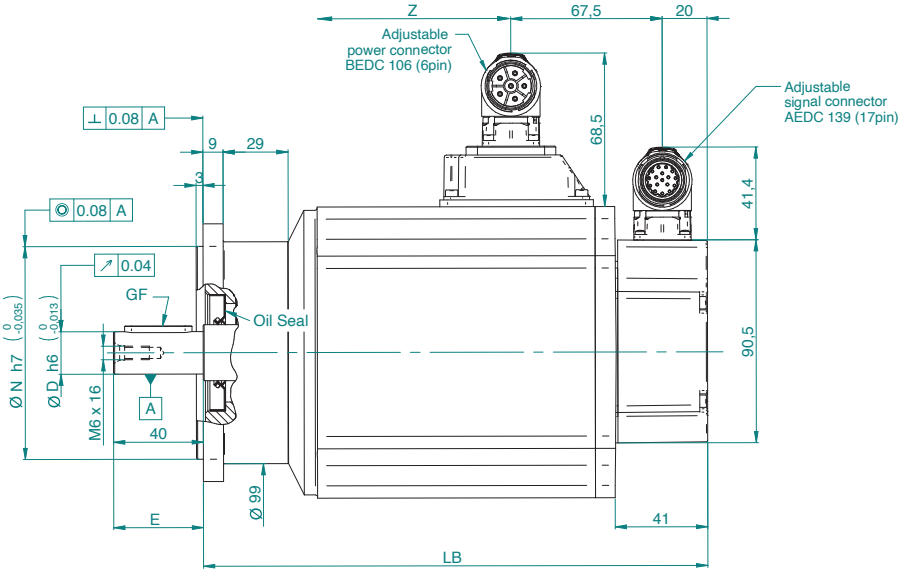
TC4 130 5H 17 4

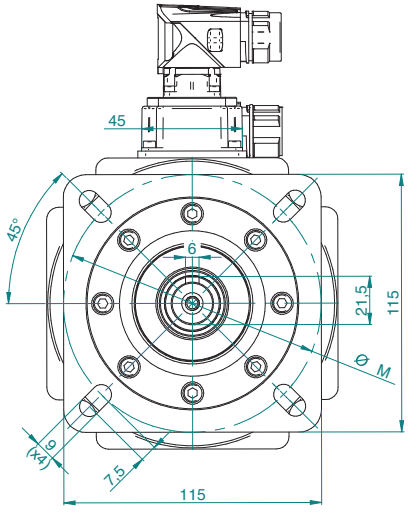
Operative curves at 400 Vac — Cn — Cmax

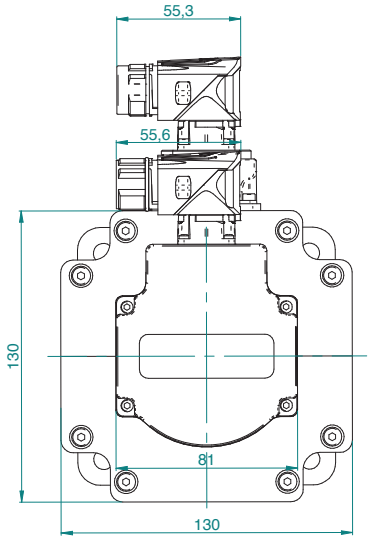


External Dimensions

TC4 130 5F
TC4 130 5G
TC4 130 5H







Model	Shaft Code	Shaft diameter	Shaft lenght	Key H x W x L
		D (mm)	E (mm)	GF (mm)
5F / 5G 5H	00	19,0	40,0	6 x 6 x 30
	80	19,0	40,0	

Model	Feedback	Flange code	Unbraked lenght		Braked lenght	
			LB (mm)*	Z (mm)	LB (mm)*	Z (mm)
5F	A12 - A13 M14 - M15	00	147,0	59,5	176,0	59,5
		34	185,0	97,5	214,0	97,5
5G	A12 - A13 M14 - M15	00	163,0	75,5	192,0	75,5
		34	201,0	113,5	230,0	113,5
5H	A12 - A13 M14 - M15	00	187,0	99,5	216,0	99,5
		34	225,0	137,5	254,0	137,5

* with feedback A1, A9, A24, R1 LB = +15mm (Z remain unchanged)
* with feedback A18 LB = +30mm (Z remain unchanged)

Flange Code	Register diameter	Fixing hole PCD
	N (mm)	M (mm)
00 *	110	145
34 **	95	115

* mandatory shaft code 00
** mandatory shaft code 80


OR
LK/GY
C
Orange
OR
Light
Black
LK
Black
BK
Cyan
C
Magenta
M
700ml

TC74 450

Frame size 150 6A

Ratings and specifications

		TYPE OF WINDING		
		15	15	17
ELECTRICAL DATA	**UNIT**			
Poles number	Nr		10	
Continuous stall torque (1)	Nm		9,55	
Peak torque	Nm		33,43	
Nominal torque	Nm	7,96	7,96	7,96
Rated Voltage	V	230 Vac	400 Vac	
Nominal power	W		2000	
Continuous stall current	Arms	10,50	10,50	6,00
Maximum current	Arms	40,80	40,80	23,20
Nominal current	Arms	9,40	9,40	5,35
Base speed at Cmax	rpm	2200	3800	2200
Nominal working speed	rpm	3000	3000	3000
Maximum working speed	rpm	3700	4000	3700
Torque costant ± 10%	Nm/Arms	0,91	0,91	1,60
Voltage costant ± 10%	V/krpm	55,00	55,00	96,70
Winding resistance ± 10% @25°C (ph/ph)	Ohm	0,29	0,29	0,87
Winding inductance ± 10% (ph/ph)	mH	4,03	4,03	12,30
Electrical time constant	ms	13,9	13,9	14,14
Thermal resistance	°C/W		1,33	
Operating temperature	°C		0 ÷ 40	
Protection degree	IP		65 (*)	
Insulation class			F	
MECHANICAL DATA	**UNIT**			
Rotor inertia without holding brake	kg cm^2		15,18	
Rotor inertia with holding brake	kg cm^2		16,55	
Max theoretical acceleration (1)	rad/s^2		22019,00	
Mechanical time constant (1)	ms	0,53	0,53	0,52
Max radial shaft load @3000/6000rpm	N		1850	
Max axial shaft load @3000/6000rpm	N		450	
Mass without holding brake	kg		13,68	
Mass with holding brake	kg		17,20	

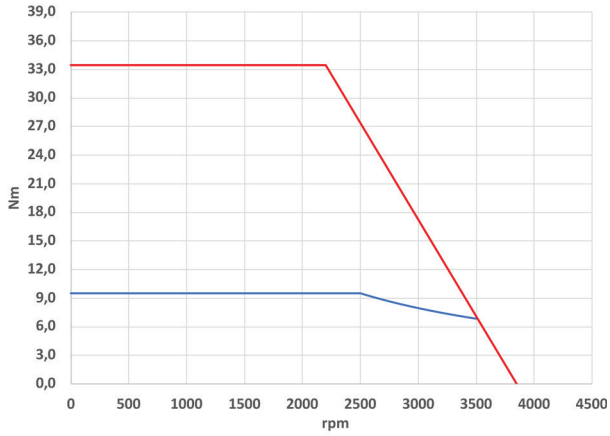
((1) Without holding brake.
(*) With oil seal mounted on the flange.

Rated output with 475x 475 x 20 mm metallic heat sink flange.
Derating must be considered if the oil seal is applied.

Torque/speed charts

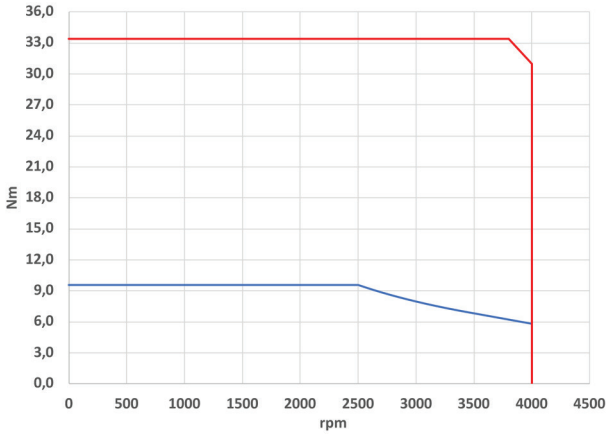
TC4 150 6A 15 2

Operative curves at 230 Vac — Cn — Cmax



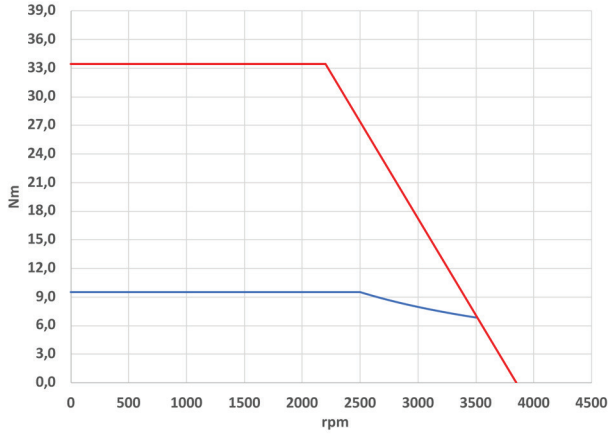
TC4 150 6A 15 4

Operative curves at 400 Vac — Cn — Cmax



TC4 150 6A 17 4

Operative curves at 400 Vac — Cn — Cmax



Frame size 150 6B

Ratings and specifications

		TYPE OF WINDING		
		15	15	17
ELECTRICAL DATA	UNIT			
Poles number	Nr		10	
Continuous stall torque (1)	Nm		19,10	
Peak torque	Nm		66,85	
Nominal torque	Nm	12,73	12,73	12,73
Rated Voltage	V	230 Vac	400 Vac	
Nominal power	W		4000	
Continuous stall current	Arms	21,00	21,00	11,94
Maximum current	Arms	81,65	81,65	46,44
Nominal current	Arms	15,05	15,05	8,56
Base speed at Cmax	rpm	2200	4000	2200
Nominal working speed	rpm	3000	3000	3000
Maximum working speed	rpm	3700	4000	3700
Torque costant ± 10%	Nm/Arms	0,91	0,91	1,60
Voltage costant ± 10%	V/krpm	55,00	55,00	96,70
Winding resistance ± 10% @25°C (ph/ph)	Ohm	0,11	0,11	0,35
Winding inductance ± 10% (ph/ph)	mH	1,95	1,95	6,15
Electrical time constant	ms	18,4	18,4	17,57
Thermal resistance	°C/W		0,9	
Operating temperature	°C		0 ÷ 40	
Protection degree	IP		65 (*)	
Insulation class			F	
MECHANICAL DATA	UNIT			
Rotor inertia without holding brake	kg cm^2		27,68	
Rotor inertia with holding brake	kg cm^2		28,76	
Max theoretical acceleration (1)	rad/s^2		21150,00	
Mechanical time constant (1)	ms	0,35	0,35	0,38
Max radial shaft load @3000/6000rpm	N		1850	
Max axial shaft load @3000/6000rpm	N		450	
Mass without holding brake	kg		18,00	
Mass with holding brake	kg		22,40	

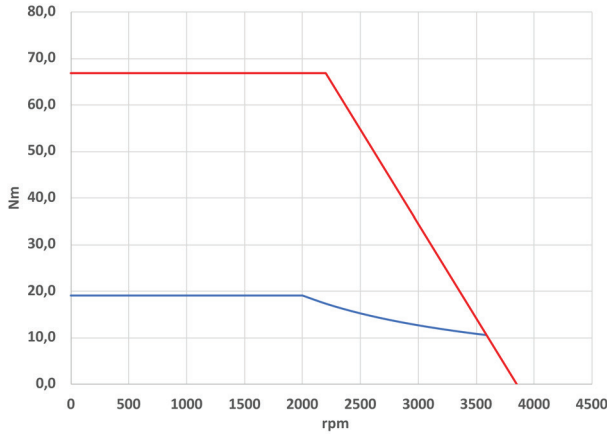
((1) Without holding brake.
(*) With oil seal mounted on the flange.

Rated output with 475x 475 x 20 mm metallic heat sink flange.
Derating must be considered if the oil seal is applied.

Torque/speed charts

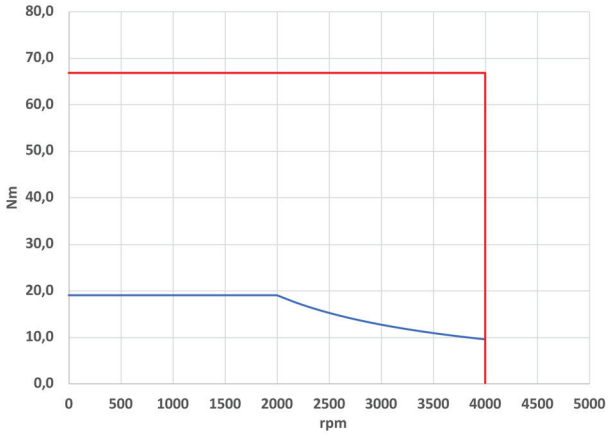
TC4 150 6B 15 2

Operative curves at 230 Vac — Cn — Cmax



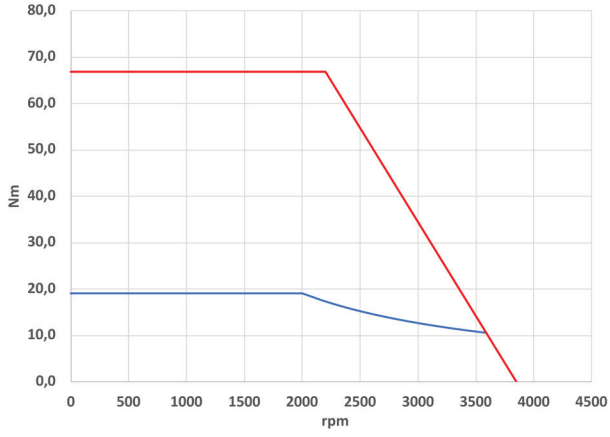
TC4 150 6B 15 4

Operative curves at 400 Vac — Cn — Cmax



TC4 150 6B 17 4

Operative curves at 400 Vac — Cn — Cmax



Frame size 150 6C

Ratings and specifications

		TYPE OF WINDING		
		15	15	17
ELECTRICAL DATA	**UNIT**			
Poles number	Nr		10	
Continuous stall torque (1)	Nm		28,65	
Peak torque	Nm		100,28	
Nominal torque	Nm	19,1	19,1	19,1
Rated Voltage	V	230 Vac	400 Vac	
Nominal power	W		6000	
Continuous stall current	Arms	31,50	31,50	17,90
Maximum current	Arms	122,50	122,50	69,70
Nominal current	Arms	22,60	22,60	12,85
Base speed at Cmax	rpm	2200	3800	2200
Nominal working speed	rpm	3000	3000	3000
Maximum working speed	rpm	3700	4000	3700
Torque costant ± 10%	Nm/Arms	0,91	0,91	1,60
Voltage costant ± 10%	V/krpm	55,00	55,00	96,70
Winding resistance ± 10% @25°C (ph/ph)	Ohm	0,06	0,06	0,19
Winding inductance ± 10% (ph/ph)	mH	1,35	1,35	3,95
Electrical time constant	ms	21,43	21,43	20,79
Thermal resistance	°C/W		0,61	
Operating temperature	°C		0 ÷ 40	
Protection degree	IP		65 (*)	
Insulation class			F	
MECHANICAL DATA	**UNIT**			
Rotor inertia without holding brake	kg cm^2		40,17	
Rotor inertia with holding brake	kg cm^2		41,25	
Max theoretical acceleration (1)	rad/s^2		24962,00	
Mechanical time constant (1)	ms	0,30	0,30	0,29
Max radial shaft load @3000/6000rpm	N		1850	
Max axial shaft load @3000/6000rpm	N		450	
Mass without holding brake	kg		23,26	
Mass with holding brake	kg		27,67	

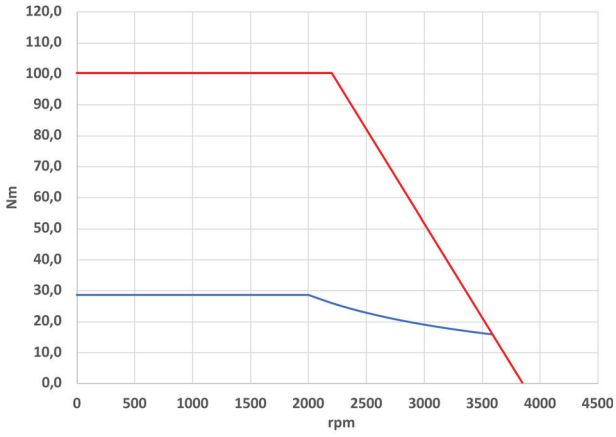
((1) Without holding brake.
(*) With oil seal mounted on the flange.

Rated output with 475x 475 x 20 mm metallic heat sink flange.
Derating must be considered if the oil seal is applied.

Torque/speed charts

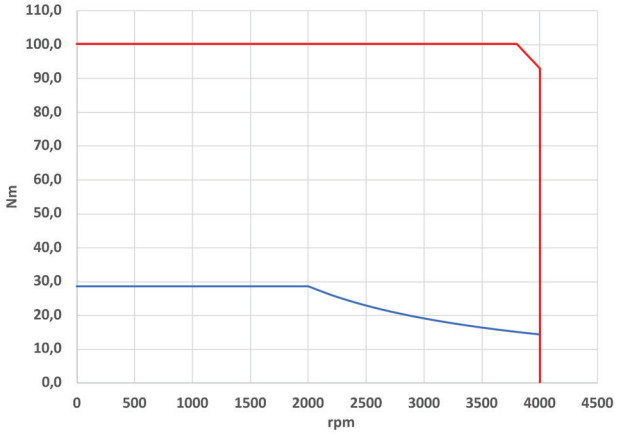
TC4 150 6C 15 2

Operative curves at 230 Vac — Cn — Cmax



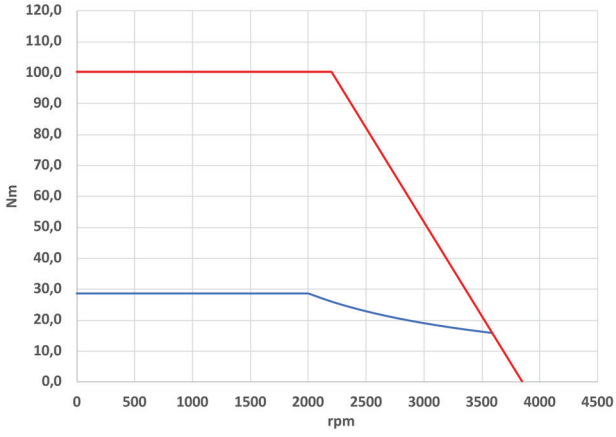
TC4 150 6C 15 4

Operative curves at 400 Vac — Cn — Cmax



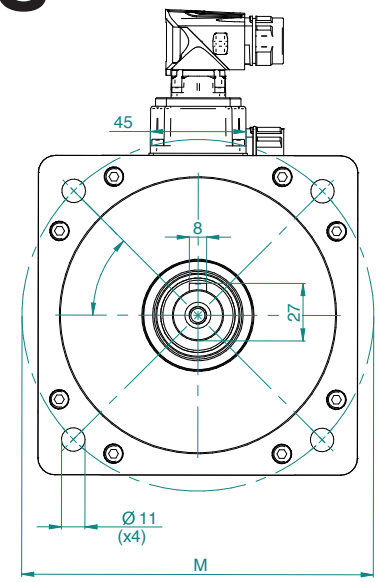
TC4 150 6C 17 4

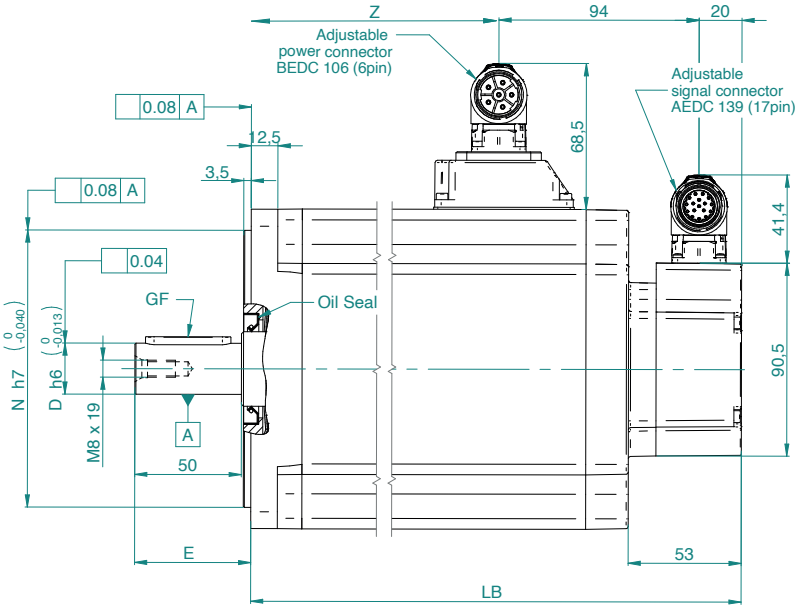
Operative curves at 400 Vac — Cn — Cmax

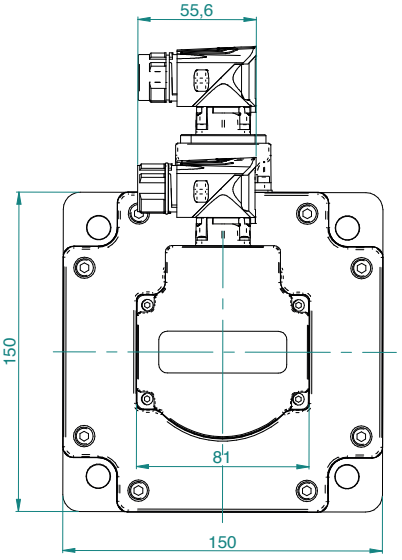


External Dimensions

TC4 150 6A
TC4 150 6B
TC4 150 6C







Model	Shaft Code	Shaft diameter	Shaft lenght	Key H x W x L
		D (mm)	E (mm)	GF (mm)
6A / 6B 6C	00	24,0	50,0	8 x 7 x 40

Model	Feedback	Flange code	Unbraked lenght		Braked lenght	
			LB (mm)*	Z (mm)	LB (mm)*	Z (mm)
6A	A1 - A12 - A13 A24 - M14 M15 - R1	00	205,0	91,5	250,0	91,5
6C	A1 - A12 - A13 A24 - M14 M15 - R1	00	250,0	136,0	295,0	136,0
6C	A1 - A12 - A13 A24 - M14 M15 - R1	00	295,0	181,5	340,0	181,5

Flange Code	Register diameter	Fixing hole PCD
	N (mm)	M (mm)
00	130	165

* with feedback A9, A18 LB = +15mm (Z remain unchanged)

Feedback

TC4 Resolver

		R1	
Motor size		TC4 60 - TC4 80	TC4 100 - TC4 130 TC4 150
Nominal Voltage	Vrms	7±5%	7±5%
Nominal current	mA	50	50
Phase shift		+3°	-5°
Minimum sin amplitude	mVrms	20	20
Frequency	kHz	10	10
Poles number		2	2
Trasformer ratio		0.5 ± 5%	0.5 ± 5%
Input impedance	Ohm	130 + j280	110+j140
Output impedance	Ohm	425 + j755	130+j240
System accuracy		± 10’	± 10’
Rotor inertia	kg cm2	0.03	0.1

Feedback

TC4 Encoder

	A1	A9
Type	GEAR ABSOLUTE MULTITURN	GEAR ABSOLUTE MULTITURN
Model	SKM 36	SRM 50
Protocol/Interface	HIPERFACE®	HIPERFACE
Resolution	128 line	1024 sin/cos
N° absolute multiturn steps	4096 (12 bit)	4096
Accuracy	+/- 120''	+/- 52''
Working temperature	–20 °C ... +100 °C	-30°C .. +115°C
Working speed	<9000 rpm	<12.000 rpm
Max Acceleration	500.000 rad/s²	200.000 rad/s²
Inertia	4,5 gcm²	0,01 kg.cm2
Weigth	70 g	200 gr
Main supply voltage	7 - 12 V	5 - 12 V
Current consumption	60 mA (withoul Load)	80 mA

TC4 Encoder

	A12	A13
Type	GEAR ABSOLUTE MULTITURN	GEAR ABSOLUTE MULTITURN
Model	EQI 1131	EQI 1131 FS
Protocol/Interface	Endat 2.2	Endat 2.2
Resolution	19 bit	19 bit
N° absolute multiturn steps	4096	4096
Accuracy	+/- 120''	+/- 120''
Working temperature	-30°C .. +110°C	-40°C .. +110°C
Working speed	<12.000 rpm	<12.000 rpm
Max Acceleration	100.000 rad/s2	100.000 rad/s2
Inertia	0,2 x10-6 Kg m2	0,2 x10-6 Kg m2
Weigth	40 gr	40 gr
Main supply voltage	3.6 - 14 V	3.6 - 14 V
Current consumption	115 mA @ 5V	115 mA @ 5V

Feedback

TC4 Encoder

	A18	A24
Type	GEAR ABSOLUTE SINGLETURN	ABSOLUTE SINGLETURN
Model	ECN 1325	ECI 1319 FS
Protocol/Interface	Endat 2.2	Endat 2.2
Resolution	25 bit	19 bit
N° absolute multiturn steps	4096	---
Accuracy	+/- 20''	+/- 65''
Working temperature	-40°C .. +115°C	-40°C .. +115°C
Working speed	<12.000 rpm	<15.000 rpm
Max Acceleration	100.000 rad/s2	100.000 rad/s2
Inertia	0,26 x10-6 Kg m2	0,245 x10-6 Kg m2
Weigth	250 gr	130 gr
Main supply voltage	3.6 - 14 V	3.6 - 14 V
Current consumption	95 mA @ 5V	95 mA @ 5V

TC4 Encoder

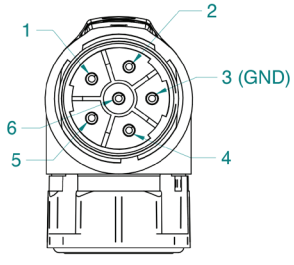
	M14	M15
Type	M-CODER INCREMENTAL WITH HALL SENSOR ENCODER	M-CODER INCREMENTAL WITH HALL SENSOR ENCODER
Model	M-CODER	M-CODER
Protocol/Interface	Line Driver A/B/Z U/V/W	Line Driver A/B/Z U/V/W
Resolution	4096 ppr	2048 ppr
N° absolute multiturn steps		
Accuracy	+/- 120''	+/- 120''
Working temperature	-40 °C ... +125 °C	-40 °C ... +125 °C
Working speed	<9000 rpm	<9000 rpm
Max Acceleration	100.000 rad/s²	100.000 rad/s²
Inertia	5.6 × 10-5 kg cm2	5.6 × 10-5 kg cm2
Weigth	20 g	20 g
Main supply voltage	5 - 12 V	5 - 12 V
Current consumption	100mA (Max)	100mA (Max)

Specifications

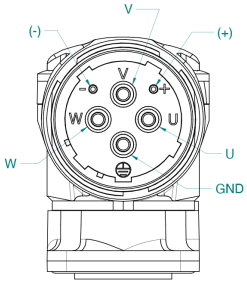
TC4 Wiring motor connection

Connectors type H8 size1 (17Amax) - H9 size1,5 (40Amax)

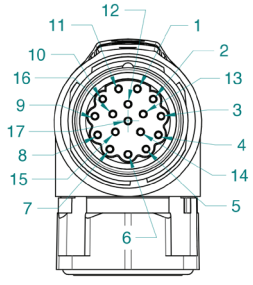
Power connector 6 PIN			Signal Connector 17 PIN					
Pin H8	Pin H9	Function	Pin	A12 - Encoder Type SC.EnDat2.1 - EQI1331 Multiturn 19bit	A13 - Encoder Type EnDat2.2 - EQI1331FS Multiturn 19bit (safety)	A24 - Encoder Type EnDat2.2 - ECI1319FS Singleturn 19bit (safety)	M14 - Encoder Type TTL + Sonde Hall 4096ppr 12bit	M15 - Encoder Type TTL + Sonde Hall 2048ppr 11bit
1	U	Phase - U	1	Thermistor	Thermistor	Thermistor	Thermistor	Thermistor
2	V	Phase - V	2	Thermistor	Thermistor	Thermistor	Thermistor	Thermistor
3	GND	Ground	3			Screen		
4	W	Phase - W	4					S1 - U
5	+	Brake +	5					S1 inverse - /U
6	-	Brake -	6					S2 - V
			7					S2 inverse - /V
			8	Clock +	Clock +	Clock +	Clock +	S3 - W
			9	Clock -	Clock -	Clock -	Clock -	S3 inverse- /W
			10	Cos +				Channel - A
			11	Data +	Data +	Data +	Data +	Index - Z
			12	Data -	Data -	Data -	Data -	Index inverse - /Z
			13	Cos -				Channel - /A inverse
			14	Sin +				Channel - B
			15	Sin -				Channel - /B inverse
			16	Vdc +	Vdc +	Vdc +	Vdc +	Vcd +
			17	0 Volts	0 Volts	0 Volts	0 Volts	0 Volts
			Body			Screen		



H8



H9

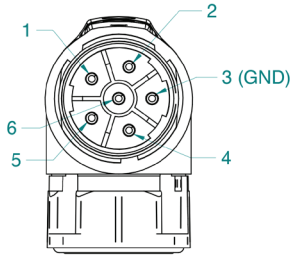


Signal

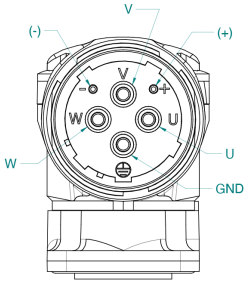
TC4 Wiring motor connection

Connectors type H7 size1 (17Amax) - H10 size1,5 (40Amax)

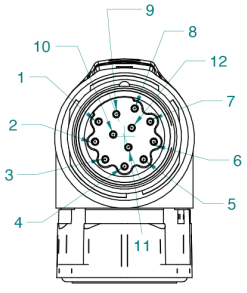
Power connector 6 PIN			Signal Connector 12 PIN			
Pin H7	Pin H10	Function	Pin	R1 Resolver - 2poles Ratio 0,5 - 6Khz	A1 - Encoder Type Sc.HiperFace SKM36 Multiturn - 17bit	A9 - Encoder Type Sc.HiperFace SRM50 Multiturn - 20bit
1	U	Phase - U	1	Excitation +	Cos -	Cos -
2	V	Phase - V	2	Excitation -	Data +	Data +
3	GND	Ground	3	Cos +	Data -	Data -
4	W	Phase - W	4	Cos -	Cos +	Cos +
5	+	Brake +	5	Sin +	Sin +	Sin +
6	-	Brake -	6	Sin -	Sin -	Sin -
			7	Thermistor	Thermistor	Thermistor
			8	Thermistor	Thermistor	Thermistor
			9		Screen	Screen
			10		0 Volts	0 Volts
			11			
			12		Vdc +	Vdc +
			Body		Screen	



H7



H10



Signal

Specifications

TC4 Brake features

MOTOR SIZE		40	60	80	100	130	150	180
Operating motor temperature	[°C]				-20 ÷ 120			
External ambient temperature	[°C]				-20 ÷ 40			
Standard brake duty	-				Stationary			
Minimum dry static torque (-20 ÷ 120 °C)	[Nm]	0.32	1.3	2.5	6.5	9.6	32	48
Nominal operating voltage (± 10 %)	[Vdc]				24			
Power consumption at 20 °C (± 7 %)	[W]	4.35	11.2	10.2	10.4	19.7	TBD	49.6
Release time	[ms]	22	58	46	49	71	TBD	120
Brake release time (pull-in)	[ms]	77	25	58	30	39	TBD	37
Maximum backlash	[deg]				1.2			

Note

The world's leading global manufacturer of electric motors and controls

Nidec, the world's largest motor brand.

Nidec is in everything, everywhere.
If you drive a car, wash your clothes, watch movies or talk on a smartphone, you're using Nidec technology. Almost anything that spins and moves, no matter how big or small, does so thanks to a Nidec product.

Our shared visions of passion, enthusiasm and tenacity guide us on our collective journey to be the best.

$29.9B
Market Capitalisation
March 31, 2023

$18.7B
2022 Group Turnover

106k
Employees

Nidec

All for dreams

Connect with us

www.controltechniques.com

www.kbelectronics.com

Nidec Control Techniques Limited. Registered Office: The Gro, Newtown, Powys SY16 3BE.

Registered in England and Wales. Company Reg. No. 01236886.

CONTROL TECHNIQUES

KB

P.N. 0781-0543-01 04/24