



Torus

Servo Motors

Velos

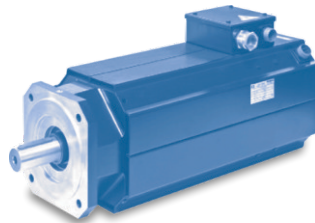
AC servo Drives

Magtor Servomotion Pvt. Ltd is an Italian joint venture company between Magnetic Srl(www.magnetic.it) and Rotomag group in india (www.rotomag.com, www.rotomotive.com). Our group companies manufacture various types

of Electric motors and Gearboxes including 3 Ph. Asynchronous motors, Permanent Magnet DC motors, Brushless DC motors, Helical, Worm, Bevel helical gearboxes and have a full fledged design and manufacturing plants in India.



AC servo Motors,
Vectorial Servo
DC Motors, Torque Motor

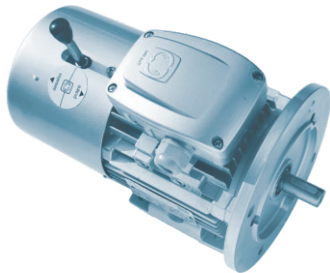


Our three manufacturing plants in India, at Anand, Gujarat, with a floor area of 20000 sq meters, feature advanced processes like Automated winding, trickle and vacuum impregnation, precision balancing, lean assembly lines and conveyORIZED painting lines. We produce over 25000 motors and gearboxes every month.



Winding machine

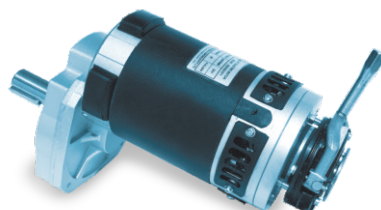
Special Purpose
Electric Motors



Vacuum impregnation



PMDC Motors,
Gear Motors, BLDC Motors



Surge and leakage
Current testing



Computerized testing

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P 04 Product Line — Torus Series



P 06 Main Features

$$P = \frac{2\pi n T}{60} \quad T = I \times \alpha$$

$$emf = \frac{\Phi N P Z}{60 A} \quad X_L = \omega L$$

P 07 Explanation of characteristics curves

143
123
96



P 08 Torus96



P 11 Torus123



P 14 Torus143



P 17 Torus143 TEBC



P 20 Accessories & optionals



P 23 Ordering code



P 24 Velos-P Drive

Magtor Servomotion offers TORUS series of compact and powerful servo motors for automation, machine building and other applications requiring high precision. When matched to VELOS series of servo drives, the resulting motor/drive package provides an optimized system that provides unmatched value in terms of performance, ease of use and cost.

Apart from the standard ratings featured in this catalogue, Magtor will be pleased to customize the Servo motors as per your specific application and ratings, offering unrivalled custom motor solutions and support.



Nominal torque Nm
Nominal power kW



4.2 Nm
1.3 kW



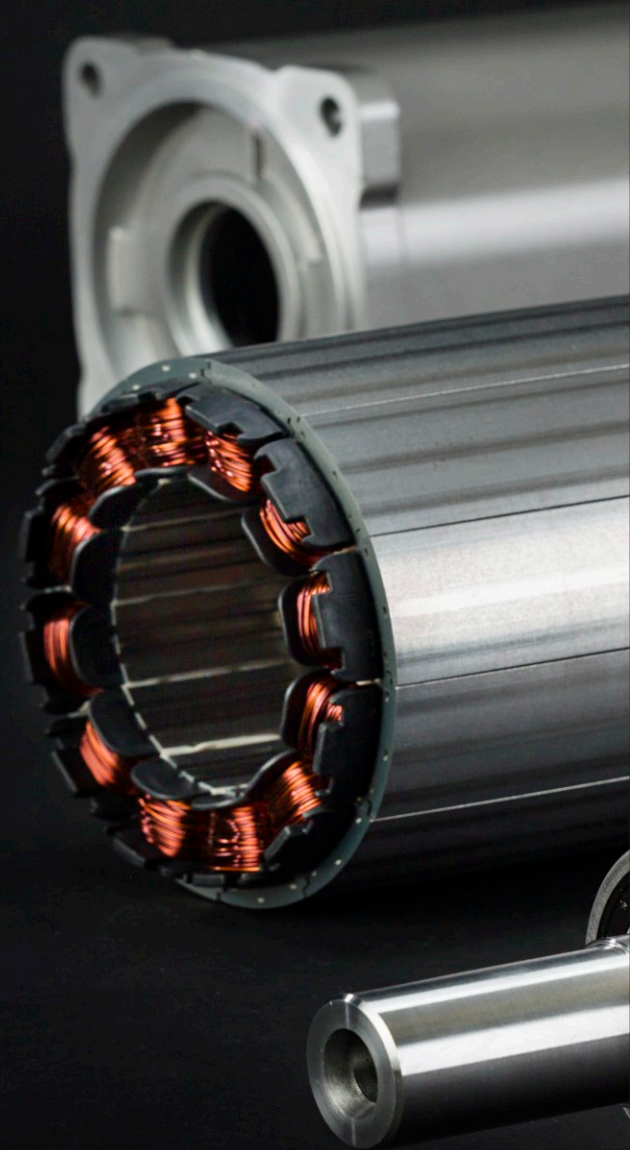
8.5 Nm
2.7 kW



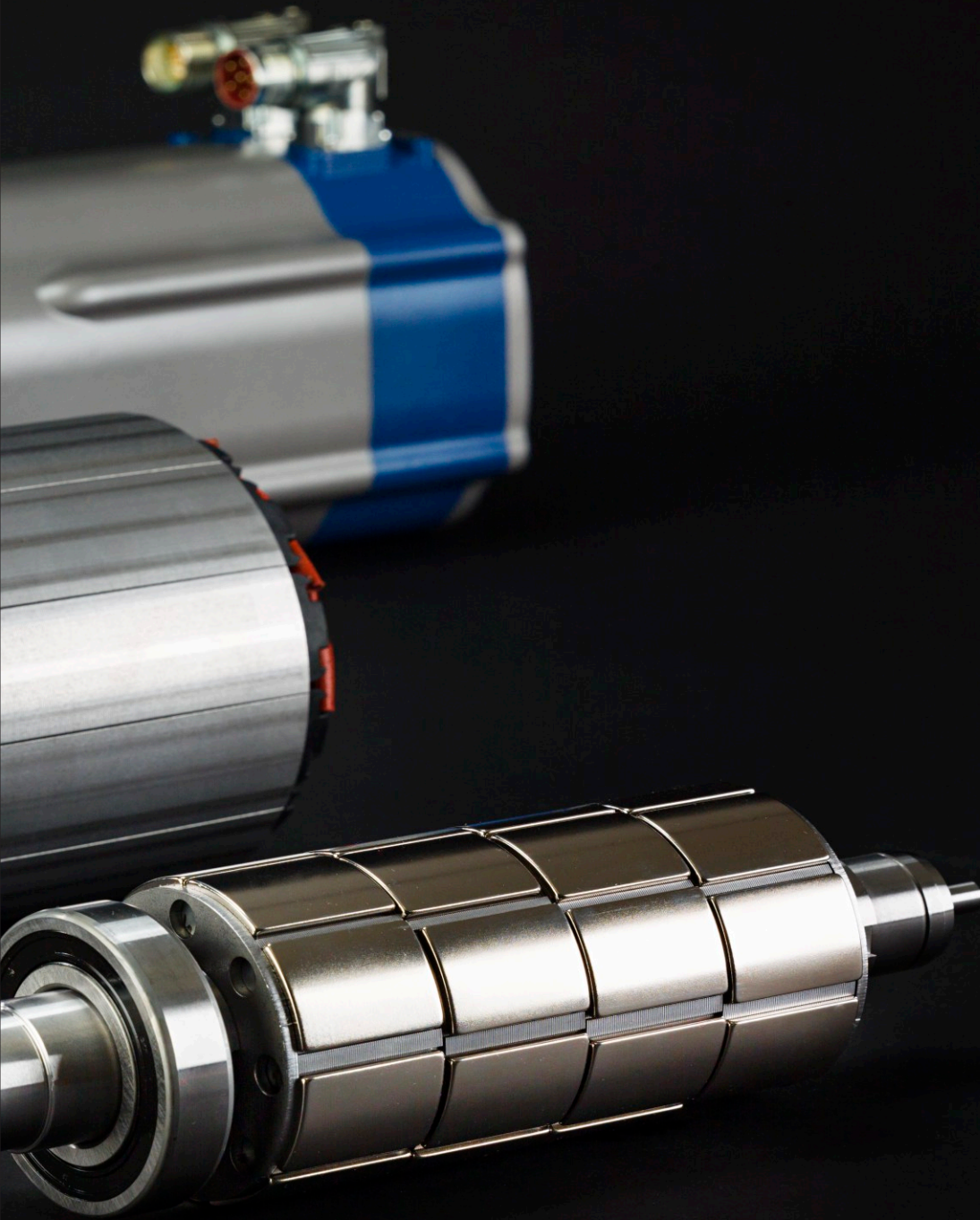
25.5Nm
4.1 kW



29 Nm
9.1 kW

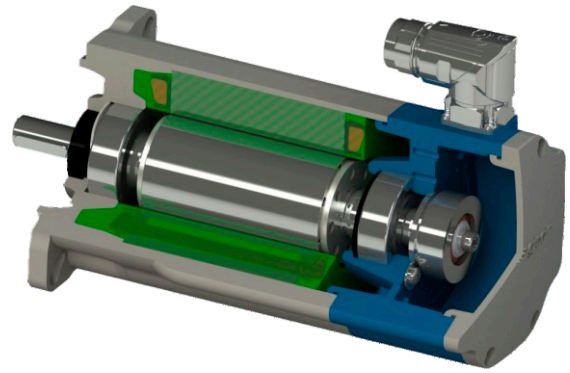


Torus Series



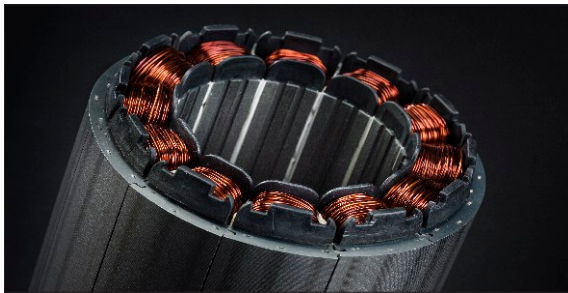
TORUS series Servo motors: Powerful and Reliable

The advanced design of TORUS servo motors results in low inertia and almost 40% higher torque in same frame size as conventional servo motors. TORUS Series of AC Servo motors are designed and built with advanced features that result in low cogging torque, high thermal capability, silent operation, and superior reliability in tough operating conditions.



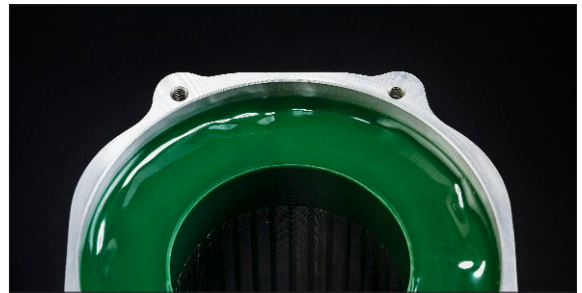
Higher stall and rated torque

Concentrated windings ensure 40% higher rated torque in each frame size compared to conventional windings and result in a compact package with higher efficiency.



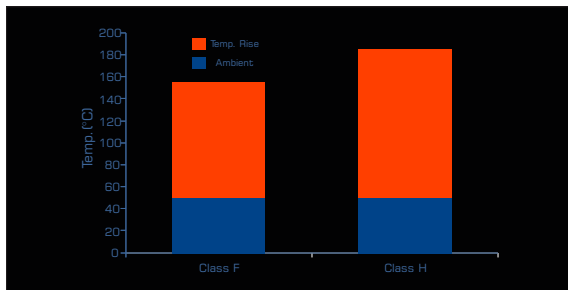
Encapsulation of windings

The stator winding is designed with double electrical insulation for high thermal efficiency. First level of impregnation with insulating Class H resin under vacuum is followed by second filling of encapsulation with epoxy resin.



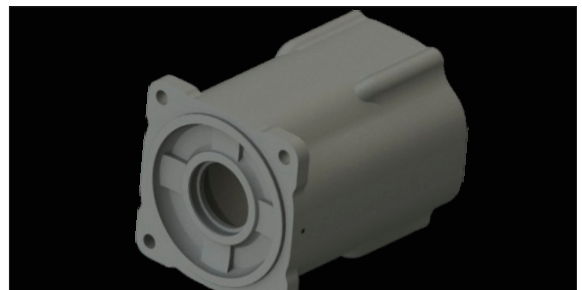
High thermal capability

Dual coated Class H, 180°C wire with high thermal heat shock resistance, together with encapsulation ensures improved heat dissipation. Torus series of motors are rated for Class F operation with maximum permissible winding temperature of 105°C, at 50°C ambient and 80% RH conditions.



Robust construction

The body and the flange are of monolithic design resulting in higher concentricity between the rotor and the stator and greater rigidity in applications that are prone to vibrations and mechanical stresses.

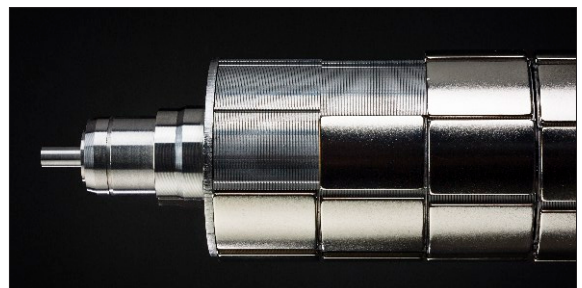


Low cogging and silent operation

Magnets are skewed to ensure low cogging and smoother low speed operation.

Low rotor inertia

Concentrated windings with high strength NdFeB magnets result in motor designs with low rotor inertia. This results in high dynamic performance and rapid acceleration.



↻ Flexible connections

Connectors are easy to turn back to front for maximum connection flexibility. Terminal box available in size 143.



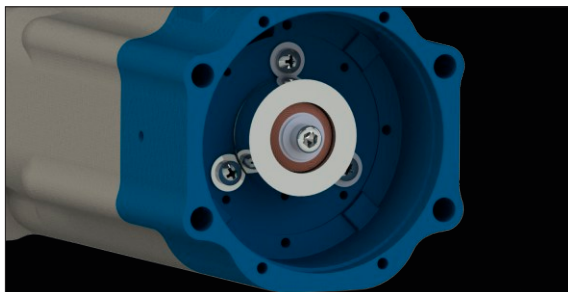
↻ Optional Integral holding brake

The permanent magnet brake with high dynamic response is available as an option.



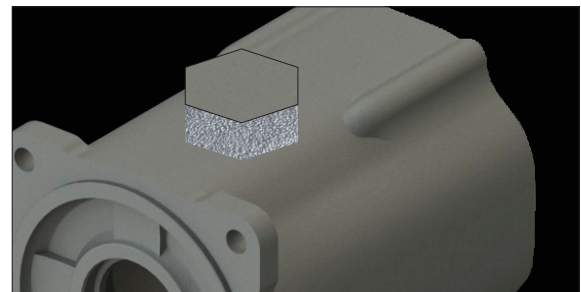
↻ Choice of resolvers and feedback devices

Various feedback option like resolver/encoder are available & make the torus series motor flexible for wide range of application.

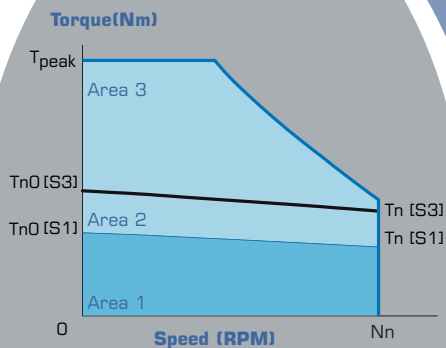


↻ Weather protected coating

Motors are powder coated for withstanding corrosive effects of hot and humid environment.



↻ Explanation of Characteristics curves



Nominal Speed

it correspond to the maximum speed. in this point the maximum overload torque is guaranteed $>Tn0$ of model

Area 1

Shows the power consumption during continuous operation S1(CEI EN 60034-1);Curve $Tn0-Tn$ indicates the reduction of torque with speed.

Area 2

Motor function area with intermittent duty S3(Duty cycle 40%). The curve $Tn0(S3)-Tn(S3)$ indicates reduction of torque with speed.

Area 3

This describes area with maximum torque as a function of speed at maximum operating voltage. For such application one must consider speed torque as a pair and not exceed that value.

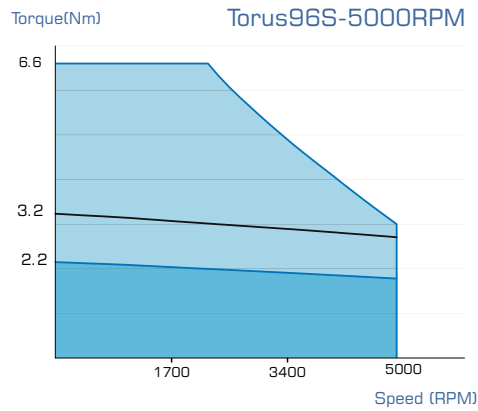
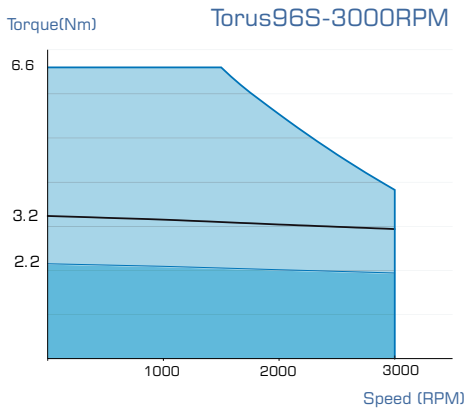
Nominal Torque(Tn)

Continuous torque delivered by motor at Nominal current & rated speed for continuous operation (S1 duty cycle).

Magtor Code	R P M	Stall torque Tn0 [Nm]	Stall Current at ΔI_{max} In0 [A _{RMS}]	Max. torque Tp [Nm]	Peak current at Tp [A _{RMS}]	Nom. Torque Tn [Nm]	Nom. power Pn [W]	Nom. Current In [A _{RMS}]	BEMF ph-ph at 20°C [V/kRPM]	Ph-ph Resistance at 20°C [Ohm]	Ph-ph induct. (mH)	Inertia J Kgom ²	Weight W [kg]
T3-501-96S- 30NUR		2.2	2.2	6.6	9.2	1.6	500	1.6	71	11.4	54.7	1.3	3.6
T3-751-96M- 30NUR	3000	3.6	2.8	10.8	10.3	2.4	*750	1.8	91	8.1	41.5	2.3	4.8
T3-102-96L- 30NUR		4.9	3.7	14.7	13.2	3.2	1000	2.4	97	5.3	30.9	3.4	5.4
T3-102-96M- 50NUR	5000	3.6	4.6	10.8	17.0	1.9	1000	2.4	56	3.0	15.6	2.3	4.8
T3-152-96L- 50NUR		4.9	5.9	14.7	21.3	2.9	1500	3.4	59	2.0	11.4	3.4	5.4

* Same Frame size of motor can be supplied with higher Power or Torque rating on request.

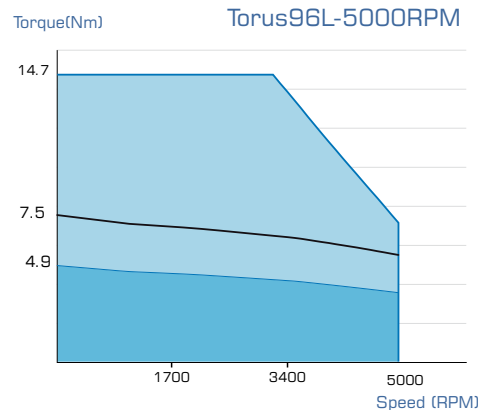
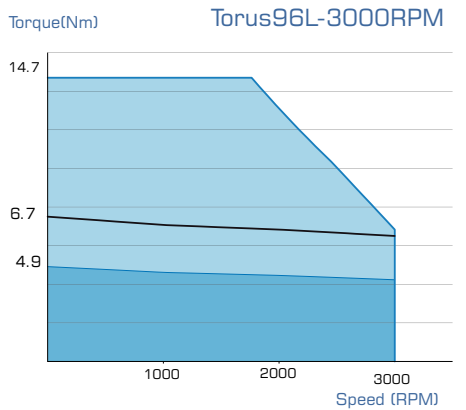
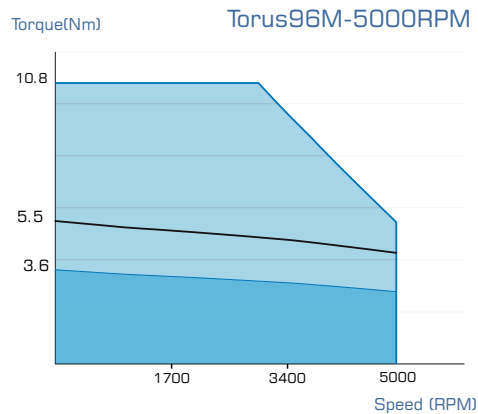
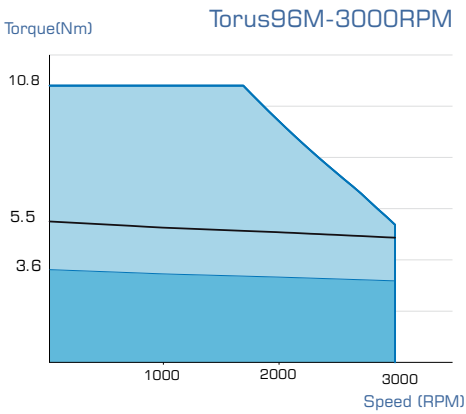
No of poles of motor are 8



Torque constant

The torque is proportional to the motor current

$$K_t = \frac{T_n \text{ [Nm]}}{I_n \text{ [A}_{RMS}]}$$

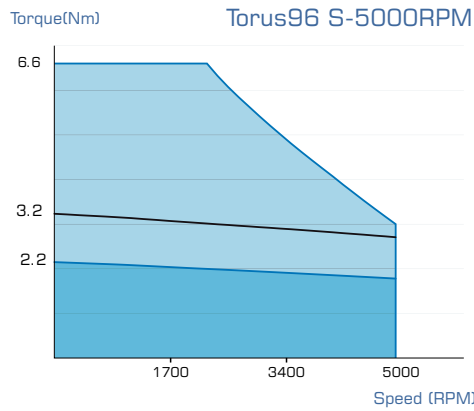
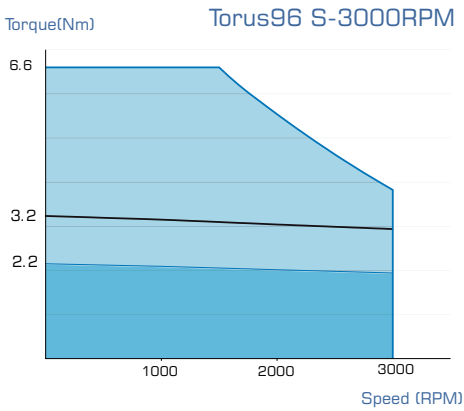


- Max torque ———
- S3 - 40% 1' ———
- S1 torque ———

Magtor Code	RPM	Stall torque Tn0 [Nm]	Stall current at Δtmax In0 [A _{RMS}]	Max Torque Tp [Nm]	Peak current at Tp Ipeak [A _{RMS}]	Nom. Torque Tn [Nm]	Nom. power Pn [W]	Nom. current In [A _{RMS}]	BEMF ph-ph at 20°C [V/kRPM]	Ph-ph resistance at 20°C [ohm]	Ph-ph induct. [mH]	Inertia J [kg.cm ²]	Weight W [kg]
T2-501-96S-30NUR	3000	2.2	3.3	6.6	14.1	1.6	500	2.4	48	4.9	24.3	1.3	3.6
T2-751-96M-30NUR		3.6	4.7	10.8	17.2	2.4	750	3.1	53	2.8	14.1	2.3	4.8
T2-102-96L-30NUR		4.9	6.7	14.7	24.0	3.2	*1000	4.3	53	1.6	9.4	3.4	5.4
T2-501-96S-50NUR	5000	2.2	5.2	6.6	21.9	1.0	500	2.3	30	2.0	9.4	1.3	3.6
T2-751-96M-50NUR		3.6	7.9	10.8	28.9	1.4	*750	3.1	32	1.0	5.0	2.3	4.8
T2-102-96L-50NUR		4.9	10.4	14.7	37.4	1.9	*1000	4.0	34	0.7	3.7	3.4	5.4

* Same Frame size of motor can be supplied with higher Power or Torque rating on request.

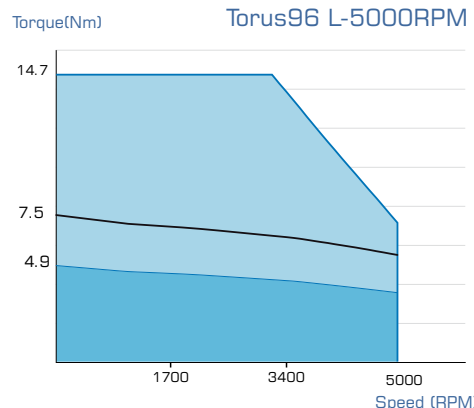
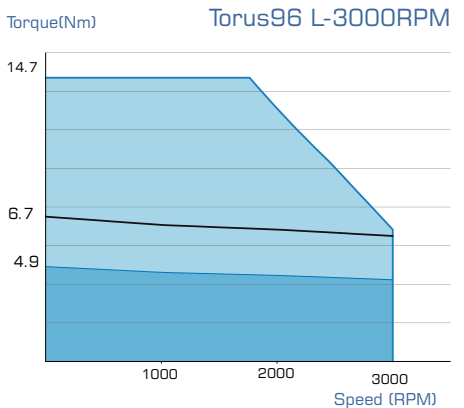
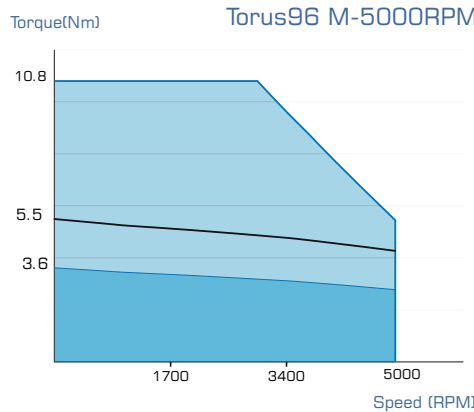
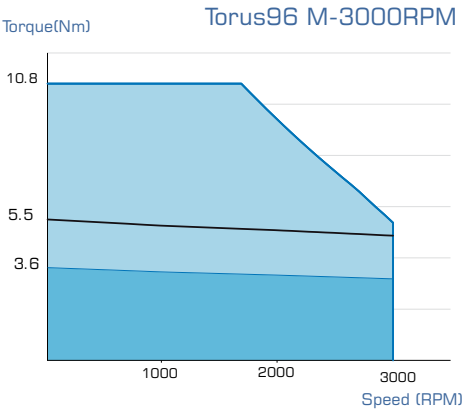
No of poles of motor are 8



Torque constant

The torque is proportional to the motor current

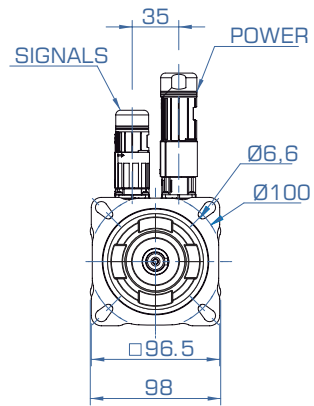
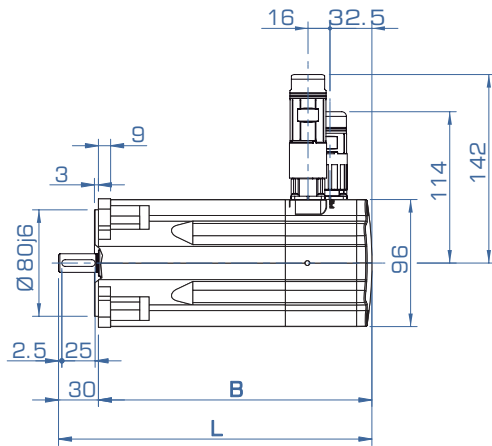
$$K_t = \frac{T_n \text{ [Nm]}}{I_n \text{ [A}_{RMS}]}$$



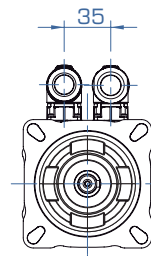
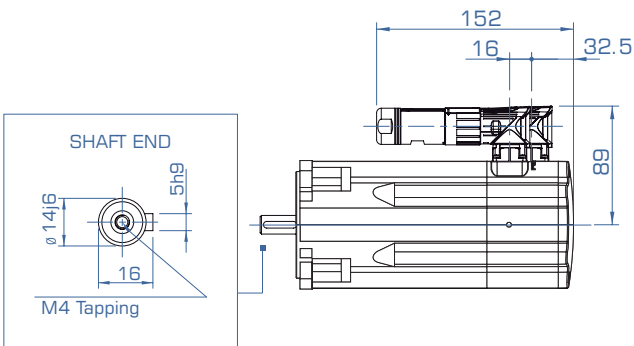
Max torque ———
 S3 - 40% 1' ———
 S1 torque ———



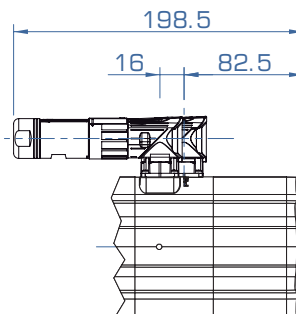
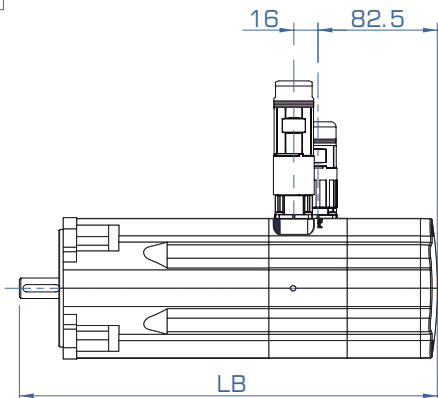
Torus96 S	B: 152.5mm
	L: 182.5mm
	LB: 232.5mm
Torus96 M	B: 179.5mm
	L: 209.5mm
	LB: 259.5mm
Torus96 L	B: 206.5mm
	L: 236.5mm
	LB: 286.5mm



Version B
Standard execution



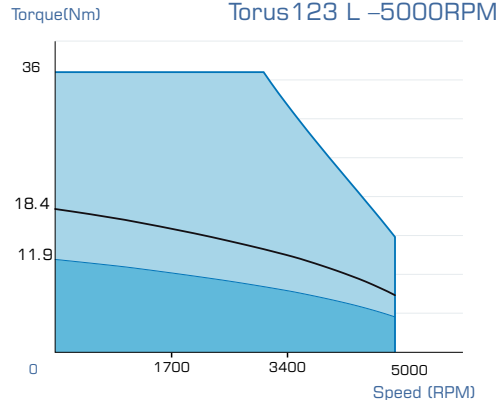
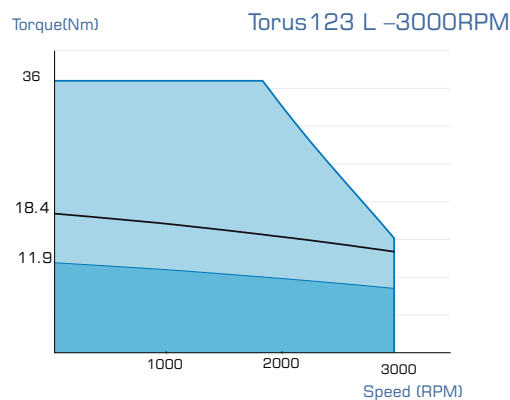
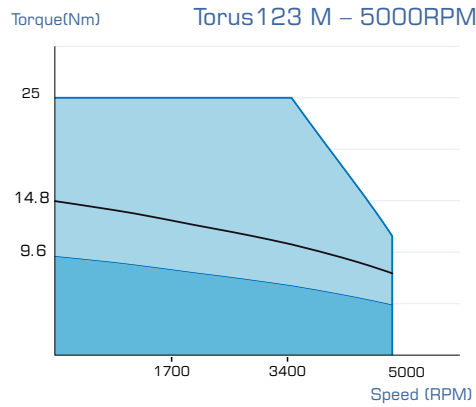
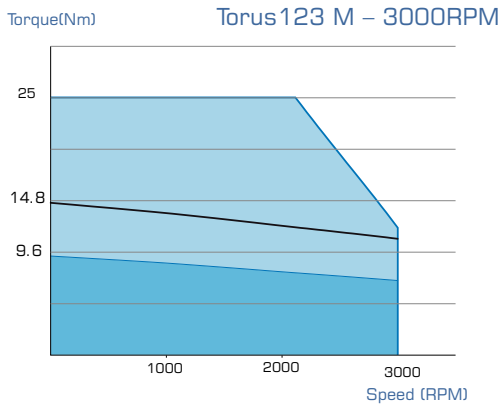
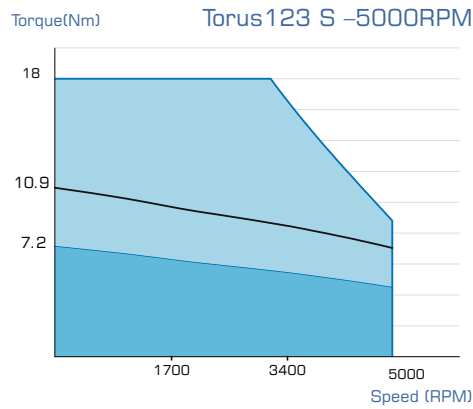
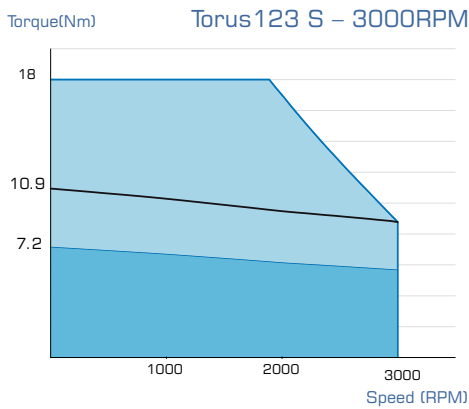
Version D
Motor with rotatable
right angle connectors



Motor with brake
Left: Version B
Right: Version D

Magtor Code	RPM	Stall torque Tn0 [Nm]	Stall Current at Δtmax In0 [A _{RMS}]	Max. torque Tp [Nm]	Peak current at Tp Ipeak [A _{RMS}]	Nom. Torque Tn [Nm]	Nom. power Pn [W]	Nom. Current In [A _{RMS}]	BEMF ph-ph at 20°C [V/kRPM]	Ph-ph resistance at 20°C [ohm]	Ph-ph induct. [mH]	Inertia J [Kgc ²]	Weight W [kg]
T3-102-123S-10NUR	1500	7.2	2.8	18.0	8.1	6.4	1000	2.5	179	9.5	98.0	8.2	6.7
T3-152-123L-10NUR		11.9	4.5	36.0	15.5	9.5	1500	3.6	183	4.5	50.0	16.1	10.7
T3-102-123S-20NUR	2000	7.2	3.9	18.0	11.2	4.8	1000	2.6	129	4.9	50.7	8.2	6.7
T3-152-123M-20NUR		9.6	4.8	25.0	14.2	7.2	1500	3.6	137	3.5	32.4	12.1	8.7
T3-202-123L-20NUR	3000	11.9	5.6	36.0	19.3	9.5	2000	4.4	148	2.9	32.9	16.1	10.7
T3-152-123S-30NUR		7.2	5.3	18.0	15.1	4.8	1500	3.5	95	2.7	27.8	8.2	6.7
T3-252-123L-30NUR	5000	11.9	8.0	36.0	27.7	8.0	2500	5.3	101	1.4	15.4	16.1	10.7
T3-202-123S-50NUR		7.2	8.7	18.0	24.8	3.8	2000	4.6	58	1.0	10.3	8.2	6.7
T3-252-123M-50NUR		9.6	10.5	25.0	30.7	4.8	2500	5.2	63	0.7	6.8	12.1	8.7

No of poles of motor are 8



Torque constant

The torque is proportional to the motor current

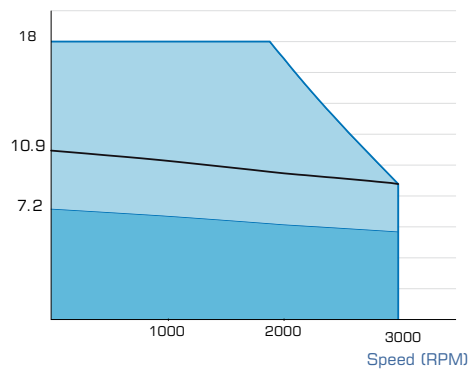
$$K_t = \frac{T_n \text{ [Nm]}}{I_n \text{ [A}_{RMS}]}$$

Max torque ———
S3 - 40% 1' ———
S1 torque ———

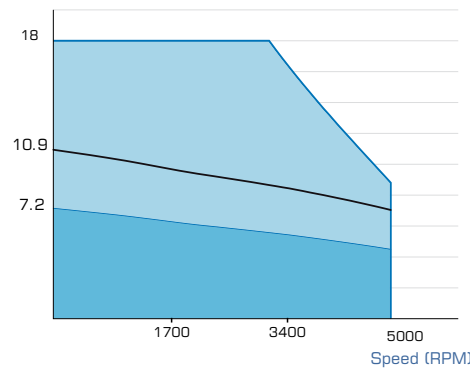
Magtor Code	RPM	Stall torque Tn0 [Nm]	Stall Current at Δtmax In0 [A _{RMS}]	Max Torque Tp [Nm]	Peak Current at Tp Ipeak [A _{RMS}]	Nom. Torque Tn [Nm]	Nom. Power Pn [W]	Nom. current In [A _{RMS}]	BEMF ph-ph at 20°C V/kRPM	Ph-ph Resistance at 20°C [ohm]	Ph-ph induct. [mH]	Inertia J [kg.cm ²]	Weight W [kg]
T2-102-123S-10NUR	1500	7.2	5.3	18.0	15.1	6.4	1000	4.7	95	2.7	27.8	8.2	6.7
T2-152-123L-10NUR		11.9	7.3	36.0	25.4	9.5	1500	5.9	111	1.7	18.5	16.1	10.7
T2-102-123S-20NUR		7.2	6.6	18.0	18.8	6.0	1250	5.5	77	1.7	18.3	8.2	6.7
T2-152-123M-20NUR	2000	9.6	8.0	25.0	23.3	7.2	1500	5.9	83	1.3	12.0	12.1	8.7
T2-202-123L-20NUR		11.9	9.3	36.0	32.3	9.5	2000	7.5	87	1.0	11.2	16.1	10.7
T2-152-123S-30NUR	3000	7.2	9.3	18.0	26.7	4.8	1500	6.2	54	0.9	8.9	8.2	6.7
T2-172-123S-30NUR		7.2	9.3	18.0	26.7	5.6	1750	7.2	54	0.9	8.9	8.2	6.7
T2-202-123M-30NUR		9.6	11.5	25.0	33.8	6.4	2000	7.6	57	0.6	5.7	12.1	8.7
T2-152-123S-50NUR	5000	7.2	15.0	18.0	43.1	2.9	1500	6.0	33	0.3	3.4	8.2	6.7
T2-202-123M-50NUR		9.6	18.7	25.0	54.7	3.8	2000	7.4	35	0.2	2.1	12.1	8.7

No of poles of motor are 8

Torque(Nm) Torus123 S – 3000RPM



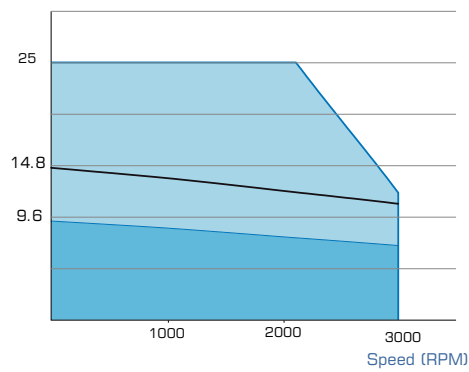
Torque(Nm) Torus123 S – 5000RPM



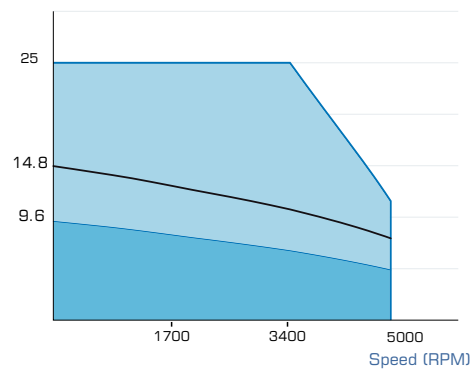
Torque constant
The torque is proportional to the motor current

$$K_t = \frac{T_n \text{ [Nm]}}{I_n \text{ [A}_{RMS}]}$$

Torque(Nm) Torus123 M-3000RPM

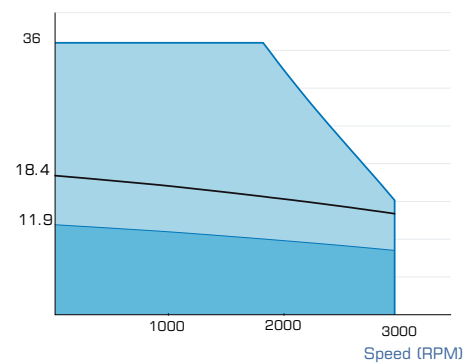


Torque(Nm) Torus123 M – 5000RPM

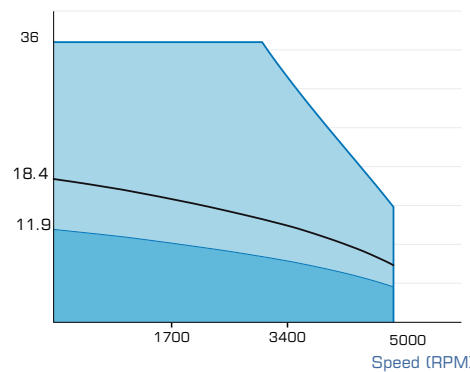


Max torque ———
S3 - 40% 1' ———
S1 torque ———

Torque(Nm) Torus123 L - 3000RPM

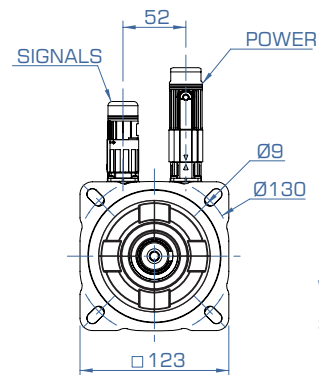
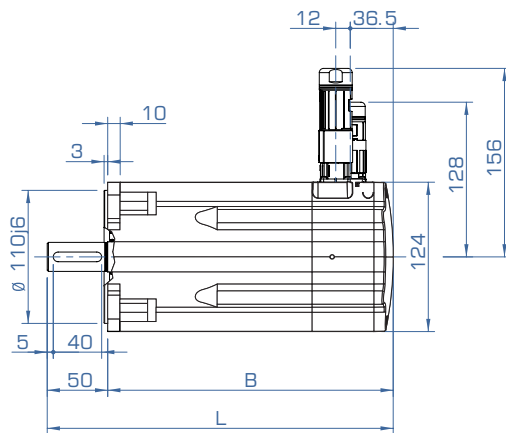


Torque(Nm) Torus123 L - 5000RPM

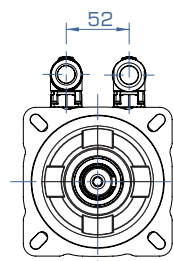
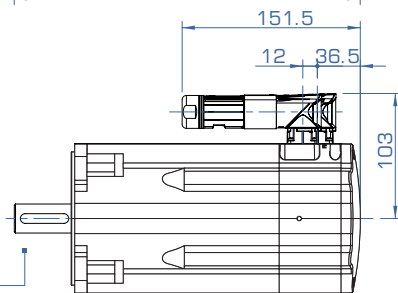




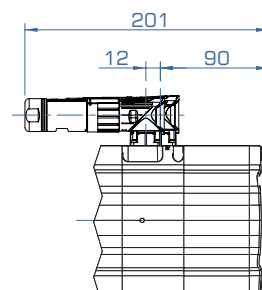
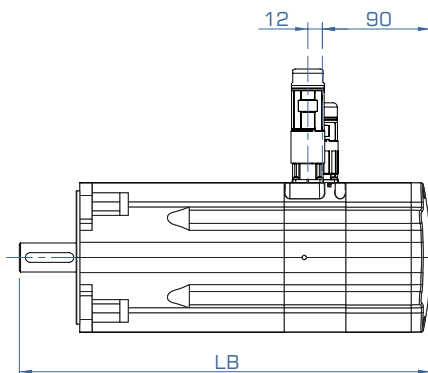
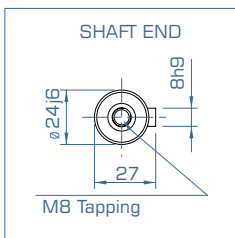
- Torus123S** B: 184mm
L: 234mm
LB: 281mm
- Torus123M** B: 210.5mm
L: 260.5mm
LB: 314.5mm
- Torus123L** B: 237mm
L: 287mm
LB: 341mm



Version B
Standard execution



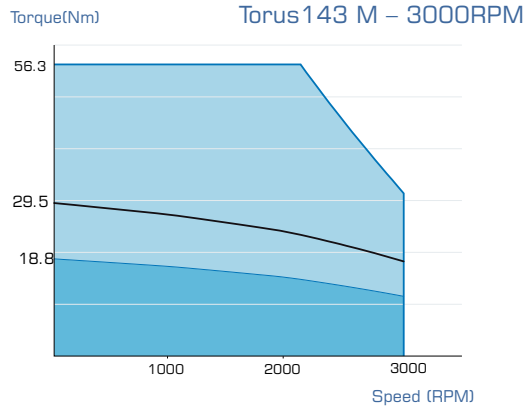
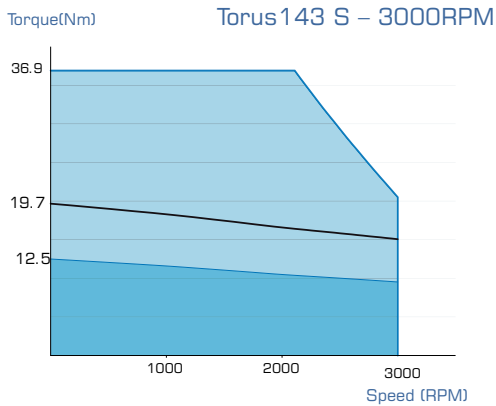
Version D
Motor with rotatable
right angle connectors



Motor with brake
Left: Version B
Right: Version D

Magtor Code	R P M	Stall torque Tn0 (Nm)	Stall Current at Δt_{max} In0 [A _{RMS}]	Max. torque Tp (Nm)	Peak current at Tp I _{peak} [A _{RMS}]	Nom. Torque Tn (Nm)	Nom. power Pn (W)	Nom. Current In [A _{RMS}]	BEMF ph-ph at 20°C V/kRPM	Ph-ph resistance at 20°C (ohm)	Ph-ph induct. (mH)	Inertia J Kgcm ²	Weight W (kg)
T3-202-143M-10NUS		18.8	7.0	56.3	22.5	12.7	2000	4.8	175	2.6	32.2	38	12
T3-302-143L-10NUS	1500	25.0	9.3	75.0	29.8	19.1	3000	7.1	174	1.8	23.9	49	15.1
T3-402-143P-10NUS		30.0	11.1	90.0	35.3	25.5	4000	9.5	180	1.5	20.5	60	18.2
T3-302-143M-20NUS		18.8	9.4	56.3	30.0	14.3	3000	7.2	130	1.4	17.9	38	12
T3-352-143L-20NUS	2000	25.0	12.4	75.0	39.7	16.7	3500	8.3	131	1.0	13.7	49	15.1
T3-402-143P-20NUS		30.0	14.3	90.0	45.4	19.1	4000	9.1	138	0.9	12.0	60	18.2
T3-302-143S-30NUS		12.5	9.4	36.9	29.5	9.5	3000	7.2	89	1.1	12.5	28	8.8
T3-352-143M-30NUS	3000	18.8	13.9	56.3	44.4	11.1	3500	8.3	89	0.7	8.4	38	12
T3-402-143L-30NUS		25.0	16.6	75.0	52.8	12.7	4000	8.5	98	0.6	7.5	49	15.1

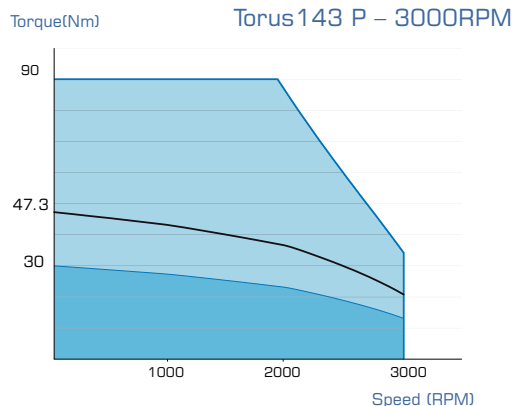
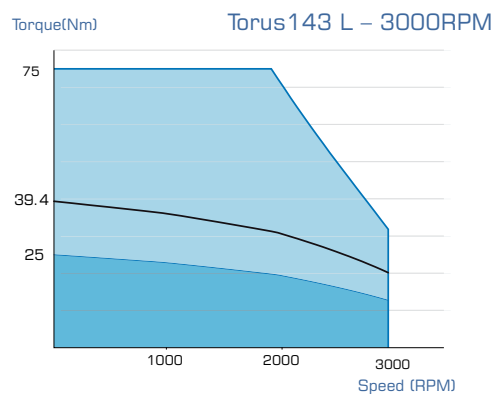
No of poles of motor are 8



Torque constant

The torque is proportional to the motor current

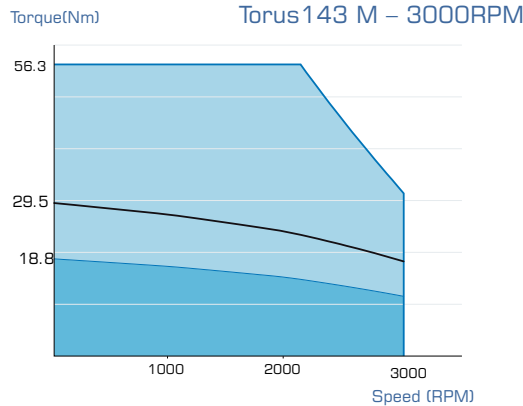
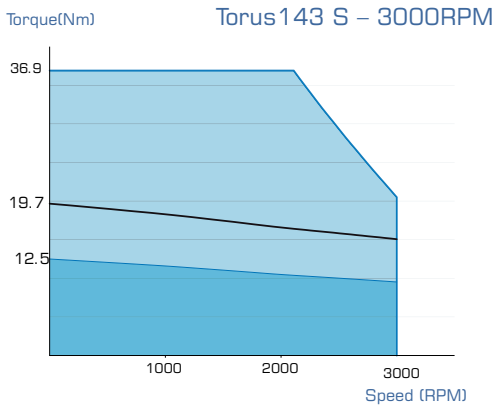
$$K_t = \frac{T_n \text{ [Nm]}}{I_n \text{ [A}_{RMS}]}$$



- Max torque** ———
- S3 - 40% 1'** ———
- S1 torque** ———

Magtor Code	RPM	Stall torque Tn0 [Nm]	Stall current at Δtmax In0 [A _{RMS}]	Max Torque Tp [Nm]	Peak current at Tp Ipeak [A _{RMS}]	Nom. Torque Tn [Nm]	Nom. power Pn [W]	Nom. current In [A _{RMS}]	BEMF ph-ph at 20°C V/kRPM	Ph-ph resistance at 20°C [ohm]	Ph-ph induct. [mH]	Inertia J [kg.cm ²]	Weight W [kg]
T2-202-143M-10NUS	1500	18.8	12.5	56.3	40.0	12.7	2000	8.5	99	0.8	10.2	38	12
T2-242-143M-10NUS		18.8	12.5	56.3	40.0	15.3	2400	10.3	99	0.8	10.2	38	12
T2-302-143L-10NUS		25.0	14.7	75.0	46.9	19.1	3000	11.2	110	0.7	9.6	49	15.1
T2-302-143M-20NUS	2000	18.8	14.8	56.3	47.2	14.3	3000	11.3	83	0.6	7.2	38	12
T2-352-143L-20NUS		25.0	20.3	75.0	64.7	16.7	3500	13.6	81	0.4	5.1	49	15.1
T2-402-143L-20NUS		25.0	20.3	75.0	64.7	19.1	4000	15.5	81	0.4	5.1	49	15.1
T2-452-143P-20NUS		30.0	23.6	90.0	75.1	21.5	4500	16.9	85	0.3	4.5	60	18.2
T2-302-143S-30NUS	3000	12.5	15.0	36.9	47.0	9.5	3000	11.5	55	0.4	4.8	28	8.8
T2-352-143M-30NUS		18.8	22.4	56.3	71.3	11.1	3500	13.3	54	0.3	3.1	38	12
T2-402-143L-30NUS		25.0	29.5	75.0	93.9	12.7	4000	15.1	55	0.2	2.4	49	15.1

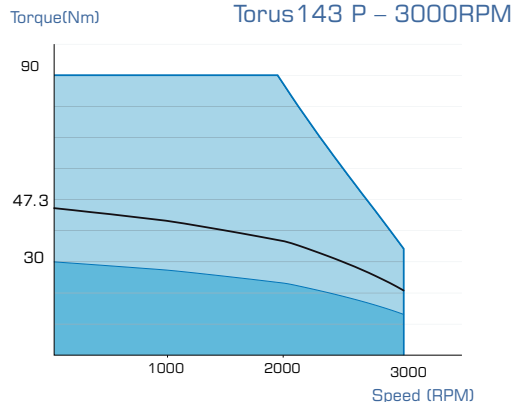
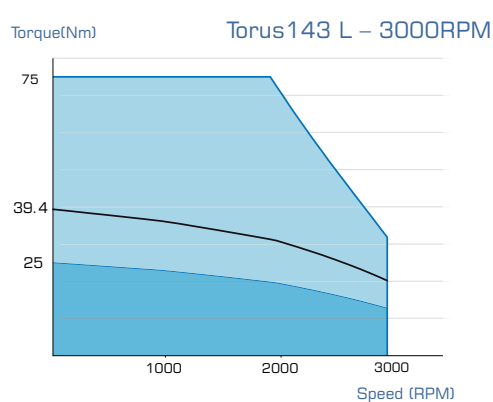
No of poles of motor are 8



Torque constant

The torque is proportional to the motor current

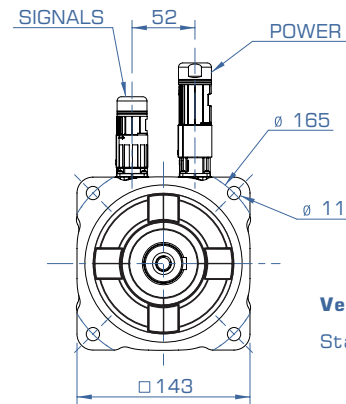
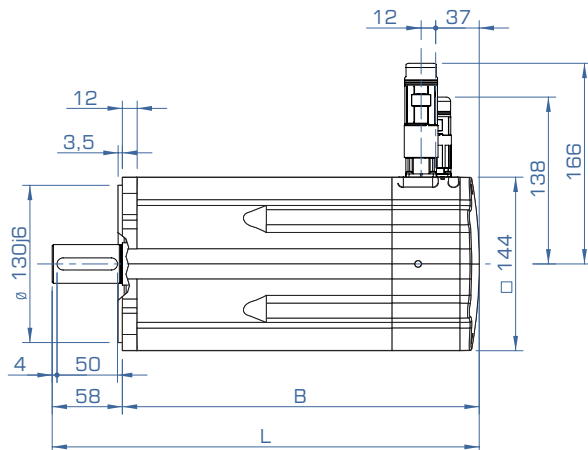
$$K_t = \frac{T_n \text{ [Nm]}}{I_n \text{ [A}_{RMS}]}$$



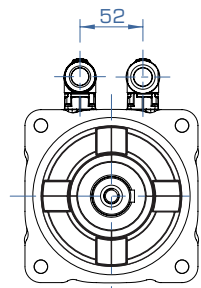
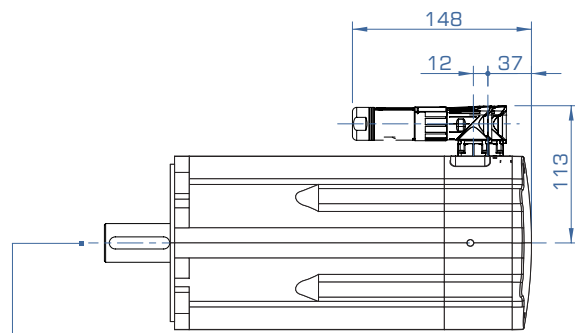
- Max torque** ———
- S3 - 40% 1'** ———
- S1 torque** ———



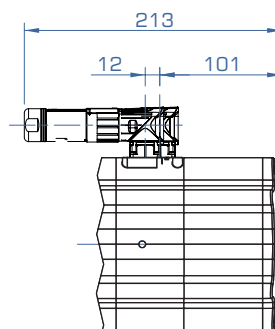
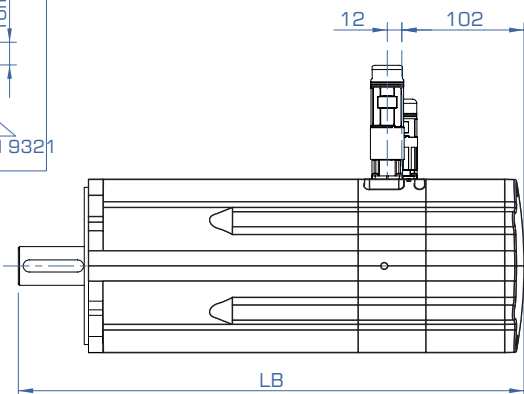
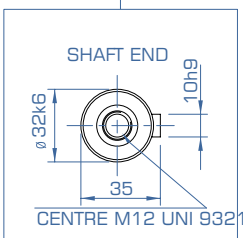
Torus143S	B: 222mm
	L: 280mm
	LB: 345mm
Torus143M	B: 259mm
	L: 317mm
	LB: 382mm
Torus143L	B: 296mm
	L: 354mm
	LB: 419mm
Torus143P	B: 333mm
	L: 391mm
	LB: 456mm



Version B
Standard execution



Version D
Motor with rotatable
right angle connectors



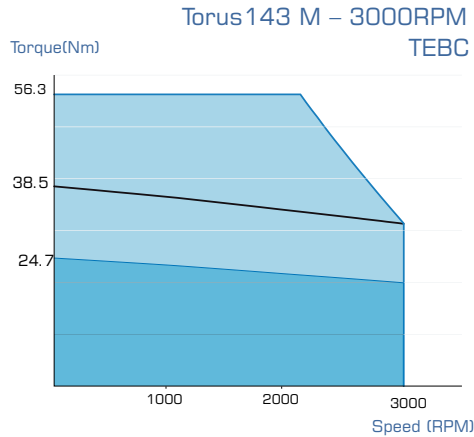
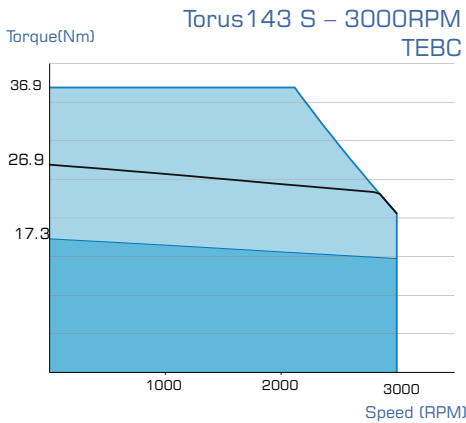
Motor with brake
Left: Version B
Right: Version D

	RPM	Stall torque Tn0 [Nm]	Stall current at Δtmax In0 [A _{RMS}]	Max Torque Tp [Nm]	Peak current At Tp Ipeak [A _{RMS}]	Nom. Torque Tn [Nm]	Nom. Power Pn [W]	Nom. current In [A _{RMS}]	BEMF Ph-ph At 20°C V/KRPM	Ph-ph resistance at 20°C Ohm	Ph-ph induct. MH	Inertia J Kgcm2	Weight W Kg
T3-143M-352-10NOT	1500	24.7	9.3	56.2	22.5	22.3	3500	8.4	175	2.567	32.2	38	15.3
T3-143L-402-10NOT		31.8	12.0	75	30.1	25.5	4000	9.6	174	1.845	23.9	49	18.7
T3-143P-502-10NOT		38.7	14.3	90	35.3	31.8	5000	11.8	180	1.500	20.5	60	22.1
T3-143L-552-20NOT	2000	31.8	16.0	75	40.1	26.3	5500	13.2	131	1.040	13.7	49	18.7
T3-143P-602-20NOT		38.7	18.5	90	45.3	28.6	6000	13.7	138	0.903	12.0	60	22.1
T3-143S-452-30NOT	3000	17.3	13.0	36.9	29.4	14.3	4500	10.7	89	1.064	12.5	28	11.8
T3-143M-622-30NOT		24.7	18.3	56.3	44.4	19.9	6250	14.7	89	0.662	8.4	38	15.3
T3-143L-752-30NOT		31.8	21.3	75	53.4	23.9	7500	16.0	98	0.585	7.5	49	18.7
T3-143P-902-30NOT		38.7	25.5	90	62.6	28.6	9000	18.9	101	0.475	6.4	60	22.1

No of poles of motor are 8

Totally Enclosed Blower Cooled

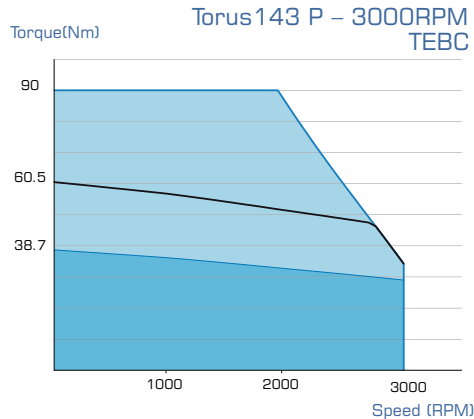
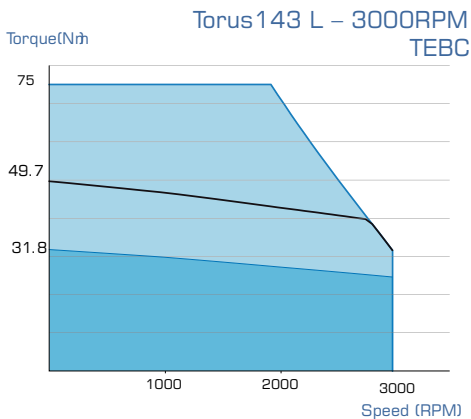
The Forced Cooling version allows torus143 motors to reach higher continuous torque across speed range. It leads itself to application where machine demand higher duty cycle motors.



Torque constant

The torque is proportional to the motor current

$$K_t = \frac{M_n \text{ [Nm]}}{I_n \text{ [A}_{RMS}]}$$



Max torque

S3 - 40% 1'

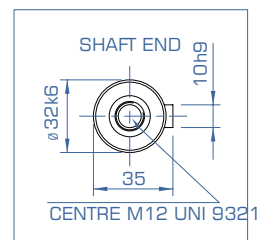
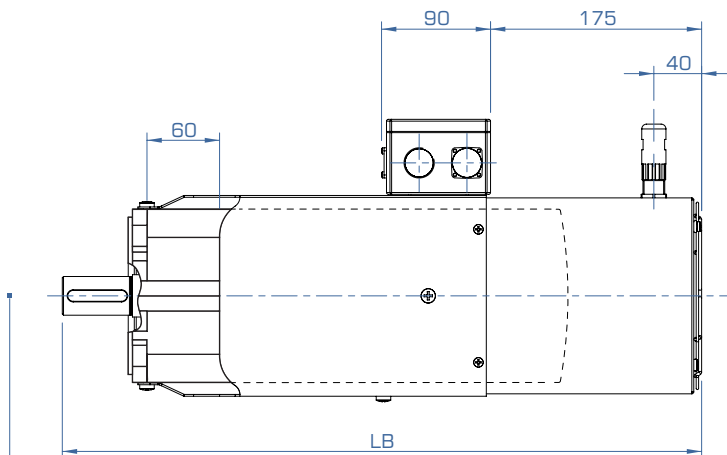
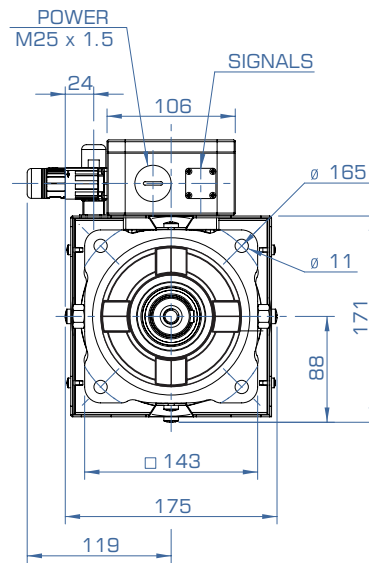
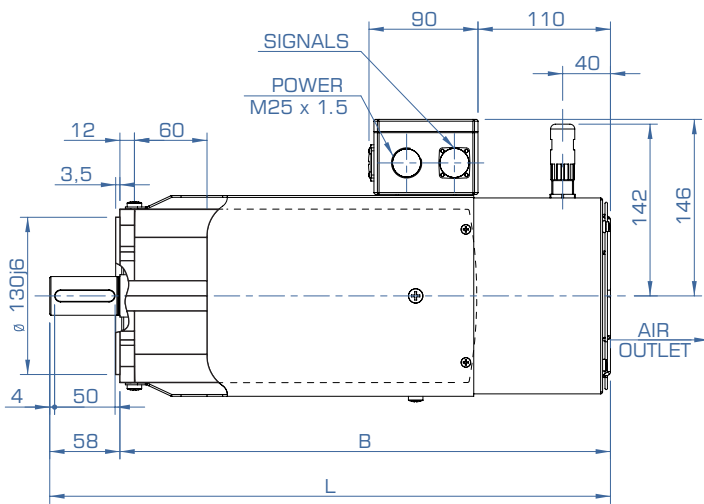
S1 torque



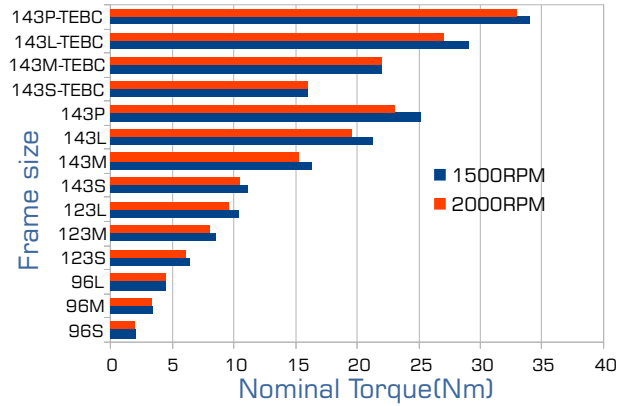
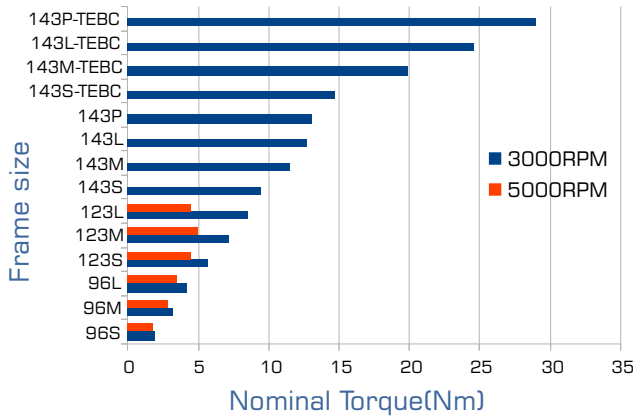
Cooling Fan Details

230Vac, 50/60Hz, 42W

Torus143S	B: 332mm	Torus143LB	: 406mm
	L: 390mm		L: 464mm
	LB: 577mm		LB: 529mm
Torus143M	B: 369mm	Torus143PB	: 443mm
	L: 427mm		L: 501mm
	LB: 492mm		LB: 566mm



Max. Nominal torque supplied by each frame size for S1 duty application is as below:



↻ Drive selection 3x360VRMS motor power supply

Torus 96

Motor Code	*Suitable Drive Rating
T3-501-96S- 30NUR	3A
T3-751-96M- 30NUR	3A
T3-102-96L- 30NUR	7A
T3-102-96M- 50NUR	7A
T3-152-96L- 50NUR	7A

Torus 123

Motor Code	*Suitable Drive Rating
T3-102-123S-10NUR	3A
T3-152-123L-10NUR	7A
T3-102-123S-20NUR	7A
T3-152-123M-20NUR	7A
T3-202-123L-20NUR	7A
T3-152-123S-30NUR	7A
T3-252-123L-30NUR	12A
T3-202-123S-50NUR	12A
T3-252-123M-50NUR	12A

Torus 143

Motor Code	*Suitable Drive Rating
T3-202-143M-10NUR	12A
T3-302-143L-10NUR	12A
T3-402-143P-10NUR	12A
T3-302-143M-20NUR	12A
T3-352-143L-20NUR	15A
T3-402-143P-20NUR	15A
T3-302-143S-30NUR	12A
T3-352-143M-30NUR	15A
T3-402-143L-30NUR	22A

Torus 143 TEBC

Motor Code	*Suitable Drive Rating
T3-143M-352-10NOT	12A
T3-143L-402-10NOT	15A
T3-143P-502-10NOT	15A
T3-143L-552-20NOT	22A
T3-143P-602-20NOT	22A
T3-143S-452-10NOT	15A
T3-143M-622-10NOT	22A
T3-143L-752-10NOT	32A
T3-143P-902-10NOT	32A

*Drive selection is done based on S1 duty torque & 150 % peak torque. Drive selection may change based on application needs

Accessories & Optionals

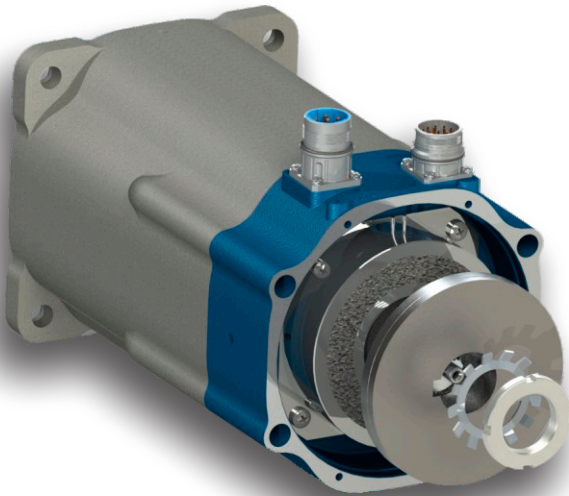
↻ Brake

Motor can be supplied with permanent magnet brake upon request. Normally brake is in applied condition. Brake release when brake is supplied with voltage.

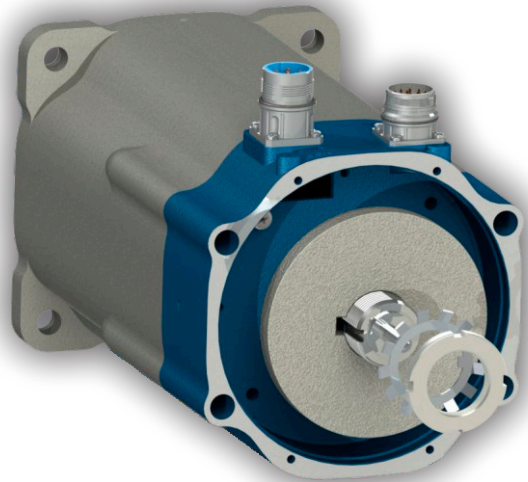
Magtor brakes are rated for 24VDC supply

	Nominal torque @20°C T_n	Stall torque @100°C T_{stat}	Inertia $*\Delta J$	Weight $*\Delta m$	Nominal Current A_{dc}
Torus96	4.5Nm	4.0 Nm	0.12 kgcm ²	0.3 kg	0.5 Amp.
Torus123	18 Nm	15 Nm	1.66 kgcm ²	0.9 kg	1.0 Amp.
Torus143	36 Nm	32 Nm	5.56 kgcm ²	1.6 kg	1.1 Amp.

* Added to the motor rated inertia / motor Weight



With Brake Version



With Extra inertia

↻ Extra Inertia

For better control Motor with high inertia can be supplied on request. (This version is possible only in without brake version.)

	Additional inertia $*\Delta J$	Additional weight $*\Delta m$
Torus96	+ 1.1 kgcm ²	+ 0.4 kg
Torus123	+ 7.5 kgcm ²	+ 1.0 kg
Torus143	+ 22.8 kgcm ²	+ 1.9 kg

* Added to the motor rated inertia / motor Weight

↻ Motor feedback system

Motor is Supplied with resolver or encoder type positional transducer & it is protected by End shield for accidental impact. Following types are available.

- **Resolver:** Sine-cosine wave-2 poles transformation ratio 0.5
- **Sin-Cos encoder(Incremental/ Incremental +Absolute):** Incremental signal sinusoidal 2048ppr - 1 Vpp signal SinCos +zero pulse-1 Period absolute waves/rev.-5Vdc
- **Biss Encoder Absolute Multiturn:** Absolute multiturn BiSS interface-incremental signal sinusoidal 2048ppr-19 bit singleturn+12 multiturn -5Vdc
- **Encoder(TTL (TTL+Hall):** Incremental signal TTL 1024-2048 ppr(Max.150Khz)- 5 Vdc line driver- Commutational signal-zero pulse

17 Pole Signal Connector Pin No for each type of connector.

Pin No	S 21 (Sin-Cos) Signal	AD36(BiSS) Signal	EF 36(TTL+Hall) Signal	Resolver Signal
1	A+	A+	A+	Sin+
2	A-	A-	A-	Sin-
3	R+(Z)	+Data	Z	V Ref+
4	D-(ref. Cos)		U	
5	C+(Ref. Sin)	+Clock	V	
6	C-(Ref. Sin)		V-	
7	OV	OV	OV	
8	KTY(+)	KTY(+)	KTY(+)	KTY(+)
9	KTY(-)	KTY(-)	KTY(-)	KTY(-)
10	UP +5Vdc	UP +5Vdc		
11	B+	B+	B+	Cos+
12	B-	B-	B-	Cos-
13	R-(Z)	-Data	Z-	V Ref-
14	D+(Ref. Cos)	-Clock	U-	
15	OV(sensor)	OV(Sensor)	W-	
16			W	
17	Shield	Shield	Shield	Case

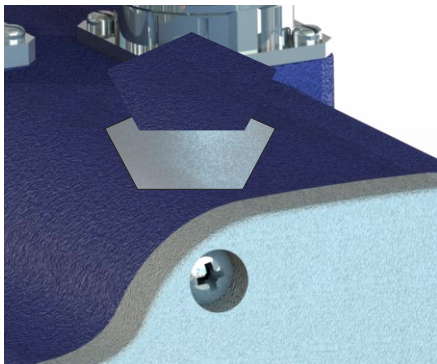
↻ Motor temperature sensor

Motor are supplied with KTY84-130 Type temperature sensor.



↻ Painting

The motor are supplied with bi-color-Blue(RAL 5000) gray(RAL 7037) with powder coating which ensure high mechanical characteristic (hardness, Elasticity) and good surface finish of motor body. On request we can provide single color paint.



↻ Seal ring

The motors are available with spring loaded Oil-seals for IP-65 Application, Where motors are expected Oil bath.



↻ Signal Cables

Shielded Cable with M23 female connector is available on request.



Code: CS - 0 - L(Length)

Where: **Feedback**

0 - Resolver	3 - Absolute Encoder
1 - Encoder TTL	4 - SinCos
2 - TTL+Hall Sensor	5 - Endat2.1 & 2.2
	6 - Biss Interface

↻ Power Cable

Shielded Power Cable suitable for torus series Motors is available with M23 Female connectors.



Code: CP - X - L

Where,
X- Cross section of cable in sq,mm (2.5 or 4)
L- length in Meter(Standard length -3m)

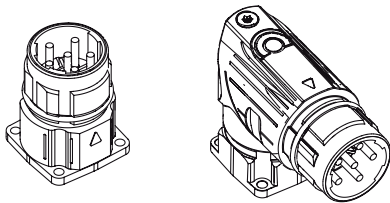
Black-1	U
Black-2	V
Black-3	W
Green+Yellow	GROUND

↻ Motor connection

Power connection 6 pins

Power supply Connection + Supply for Brake connections

M23 Connector

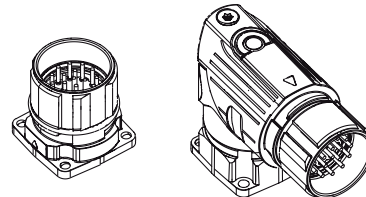


Straight and 90° right angle rotatable connectors.

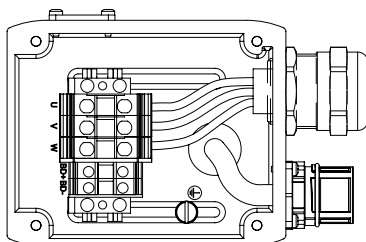
Signal connection 17 pins

Connection for speed/Position sensor

M23 Connector



Straight and 90° right angle rotatable connectors.



Adjustable Terminal Box

Adjustment in 2 direction only for Torus143

Ordering Codes

T 2 - 5 0 1 - 0 9 6 S - 1 0 N U R

Voltage

2 - 205×3
3 - 360×3

Frame

096
123
143

Frame length

S - Small
M - Medium
L - Long
P - Pretty long

Power

Code	Power(Watt)	*Frame
501	$50 \times 10 = 500$	96S
751	$75 \times 10 = 750$	96M
102	$10 \times 10^2 = 1000$	96M/L
122	$12 \times 10^2 = 1200$	96L
152	$15 \times 10^2 = 1500$	123S
202	$20 \times 10^2 = 2000$	123M/S
252	$25 \times 10^2 = 2500$	123L
302	$30 \times 10^2 = 3000$	143S
352	$35 \times 10^2 = 3500$	143M
402	$40 \times 10^2 = 4000$	143L
452	$45 \times 10^2 = 4500$	143S-TEBC
502	$50 \times 10^2 = 5000$	143M-TEBC
702	$70 \times 10^2 = 7000$	143L-TEBC
902	$90 \times 10^2 = 9000$	143P-TEBC

Speed(RPM)

1 - 1500
2 - 2000
3 - 3000
5 - 5000

FeedBack

0 - Resolver
1 - Encoder TTL
2 - TTL+Hall Sensor
3 - Absolute Encoder(BISS)
4 - SinCos
5 - Endat2.1 & 2.2

Oil Seal & Brake

N - Both Not Required
S - With Seal & Without Brake
B - With Brake And Without Seal
A - With Seal and Brake

Fan

U - Without fan
O - With Fan

Connection

S - Straight Connector
R - Right angle Connector
T - Terminal Block for Power And Straight for signal

*Frame Size is Suggested for 3000RPM rating for other speed rating frame size may change.

Option is available with torus 143 frame size only.

Velos-P Drive

Magtor present velos series of high performance drives to offer matched servomotors-drive solution for variety of applications. Designed with the latest DSP and IGBT technologies, these state of art drives are perfectly matched with torus series servo motors to provide exceptional system performance at an unmatched price. The drive are manufactured to perfection with 100% testing under load prior to shipment.



↻ Velos-P Drive

Features

- Output Frequency 1 to 1100Hz.
- Switching frequency (PWM) 3-16 kHz
- Speed loop bandwidth 150Hz
- Current loop bandwidth up to 1500Hz
- Update cycle internal loop: Speed, Current, Positioning and speed task
- PLC cycle equal to PWM cycle selectable from 3 to 16Hz (200-62.5µs)
- 3 fast inputs with sampling frequency 150Mhz.

Double feedback sensor

The drive manage 2 feedback sensors: one on the motor and one external (for applications requiring the compensation of backlash)

- TTL Encoder
- TTL Encoder and hall sensor
- Resolver
- Sin-Cos Encoder(Incremental & Absolute)
- Endat 2.1 and 2.2 Encoder
- Biss Encoder

FieldBus

The Drive manages the fieldbus with two independent lines, one for communication between drive (CAN Bus) and the second for external communication.

- CAN open
- Profibus DP
- Ethercat
- Anybus CC(DriveNet, EtherNet, IP , Sercos Etc.)

I/O Digital

- 8 Digital Inputs- Optoisolated 24VDC
- 2 Digital Output- Optoisolated 24VDC

I/O Analog

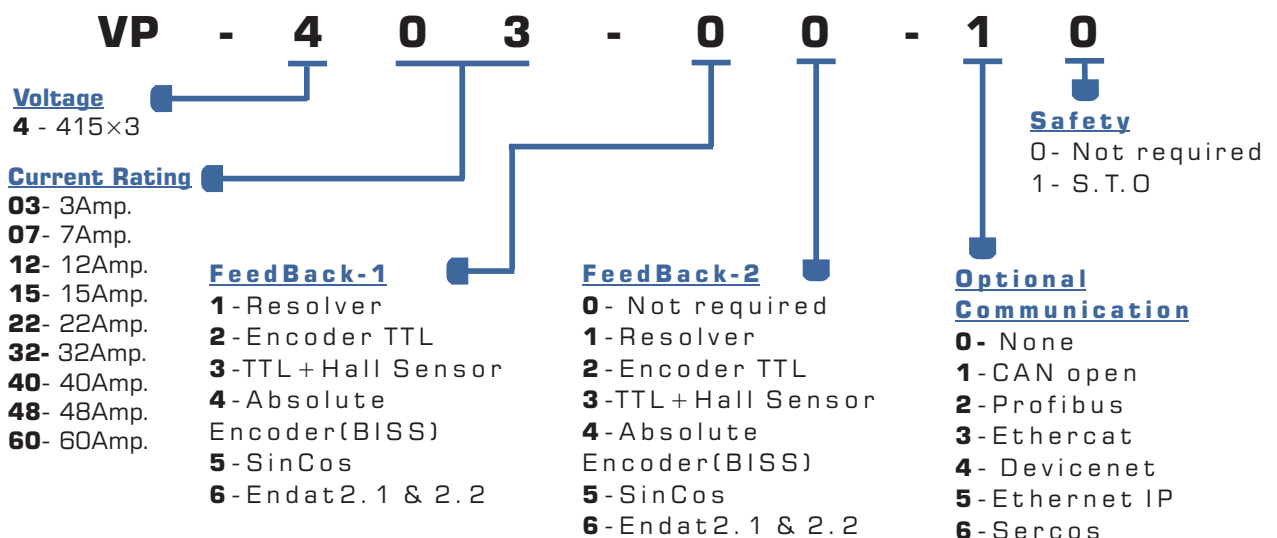
- 3 Configurable analog input
- 2 configurable analog output



Applications

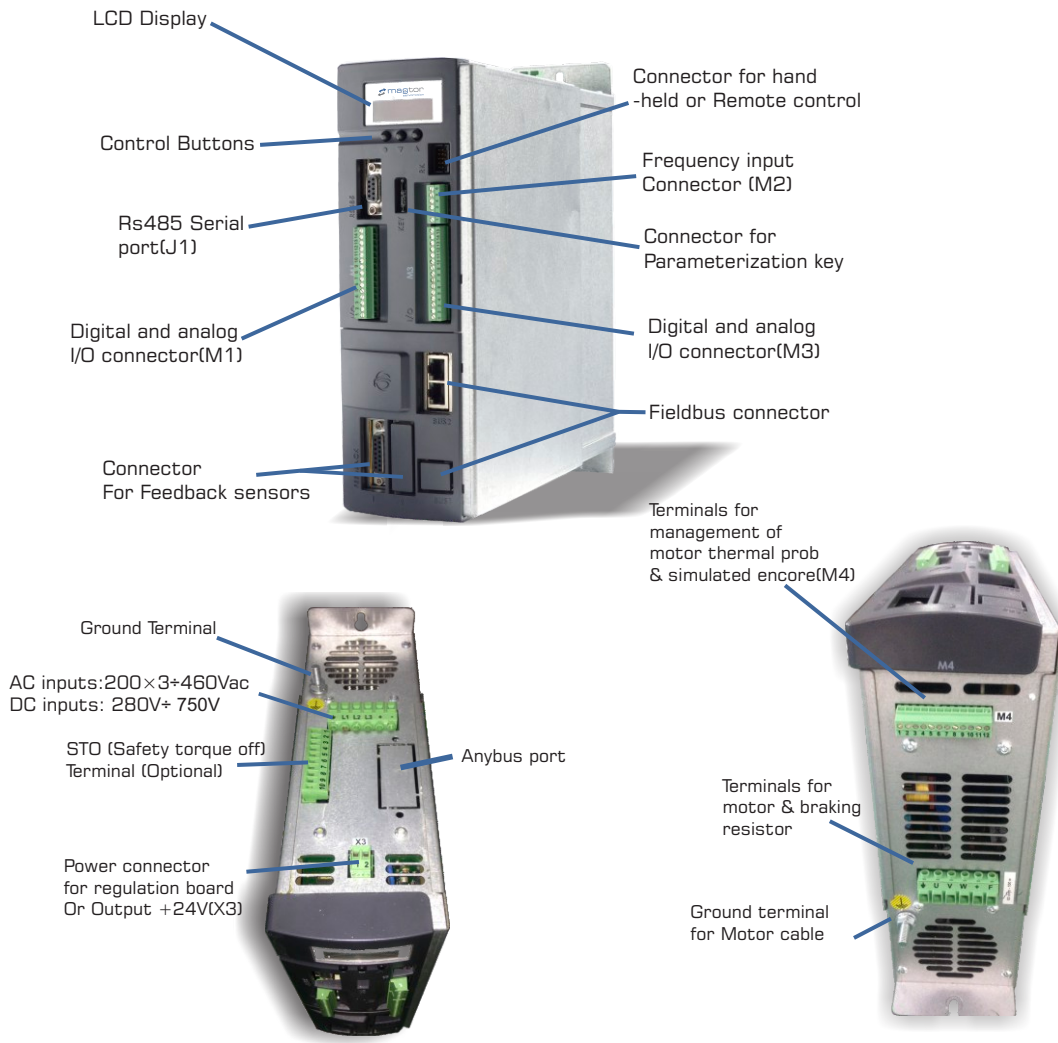
- Electrical Gearing
- PID Regulation
- Positioner (Point-to-Point / Rotary Table)
- Interpolated
- Electronic Cams
- Winder/unwinder
- Spindle indexing
- Rotary cutter
- injection servo
- Backlash management(Dual loop)

↻ Ordering Codes



By default, One RS422/485 port available with drive

Velos-P Drive connectors & terminals



Velos-P Drive Specifications(3x415)

Drive Size		S		M			L	X		
Nominal Rating		3	7	12	15	22	32	40	46	57
Overload										
120% x 30s	POWER KW	1.5	3	5.5	7.5	11	18.5	22	22	37
	I rated (A rms)	3.6	8.3	14.2	17.8	26	37.9	47.4	54.5	68.1
150% x 30s	POWER KW	1.5	3	5.5	7.5	11	15	18.5	22	30
	I rated (A rms)	3.2	7.4	12.6	15.8	23.2	33.7	42.2	48.5	60.6
200% x 30s	POWER KW	1.1	2.2	4	5.5	7.5	11	15	18.5	22
	I rated (A rms)	2.6	6	10.2	12.8	18.8	27.3	34.2	39.3	49.1
200% x 3s + 150% x 30s	POWER KW	1.5	3	5.5	7.5	11	15	18.5	22	30
	I rated (A rms)	3	7	12	15	22	32	40	46	57.5
Size	H(mm)	303		303			303	322		
	W(mm)	89		116			137	194		
	D(mm)	253		253			253	253		
Weight	(kg)	3.5		4.5			5.5	9		10
Approvals		CE								

OPDE Explorer

OPDE explorer is software tool that can be used to configure and operate Velos-P series Drives.

Function

- Series communication with device
- Drive parameter reading and writing
- drive status check
- recipe saving and loading for specific application.

Computer System Requirement

- Operating System: Windows 2000 Or Above
- Adapter for RS232/RS485 and/or CANOPEN communication
- Processor: Pentium or above

Features

Developed Under Windows:

- Environment HTML, XML with a control menu divided into folder.
- It allows user configure drive via Computer:
- Procedure of assistance for the commissioning and parametrization (Wizard) with access to the motors and sensors data base.

I/O Functions:

SoftScope function: digital scope up to 4 values (realtime data sampling and displaying) with settable pre / posttrigger (t sampling = 200 microsec)

Parameters and variables:

- Configuration with saving of the settings on both OPD Explorer and programming key.
- Download and upload management of the parameters, firmware and applications.
- Window and buffer of drive alarms (code, description and time)
- Communication via ModBus (60 units), CAN bus, ProfiBus and ETHERCAT

Graphic Display

The “Graphic display” function in the “Tree” window can be used to see two internal sizes of the drive. (Dxx) contemporaneously and in graph form.

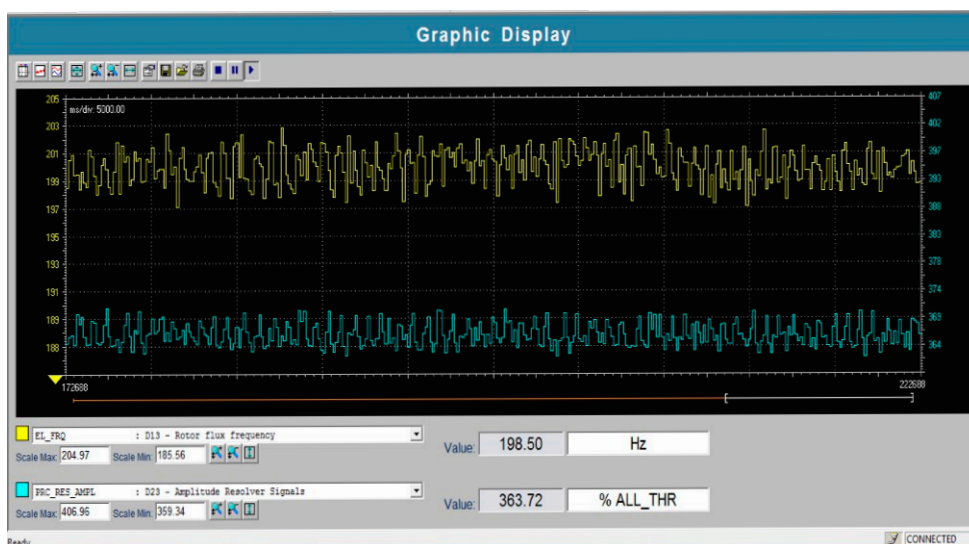
The two sizes can be selected from among those available in the relative drop down menu, and are displayed in a range that can be selected by the user. In addition, as the example that follows shows, the immediate value of the interested size, as well as the size itself, can also be seen.

Real Time Graph

The “Real-time graph” function can be used to acquire some of the internal variables of the drive in real time, saving them with reference to a selectable trigger.

The window of this function is divided into two folders:

- Configuration
- Graph



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