TÜVRheinland® CERT ISO9001:2015

EC MOTION

STEPPING MOTORS

2-Phase Hybrid Type | 3.7 - 10.2 Nm
1.8° Full Step Angle

SCHRITTMOTOREN

2-Phasen Hybrid-Schrittmotoren | 3,7 - 10,2 Nm
1,8° Vollschrittwinkel

SECM296... Series

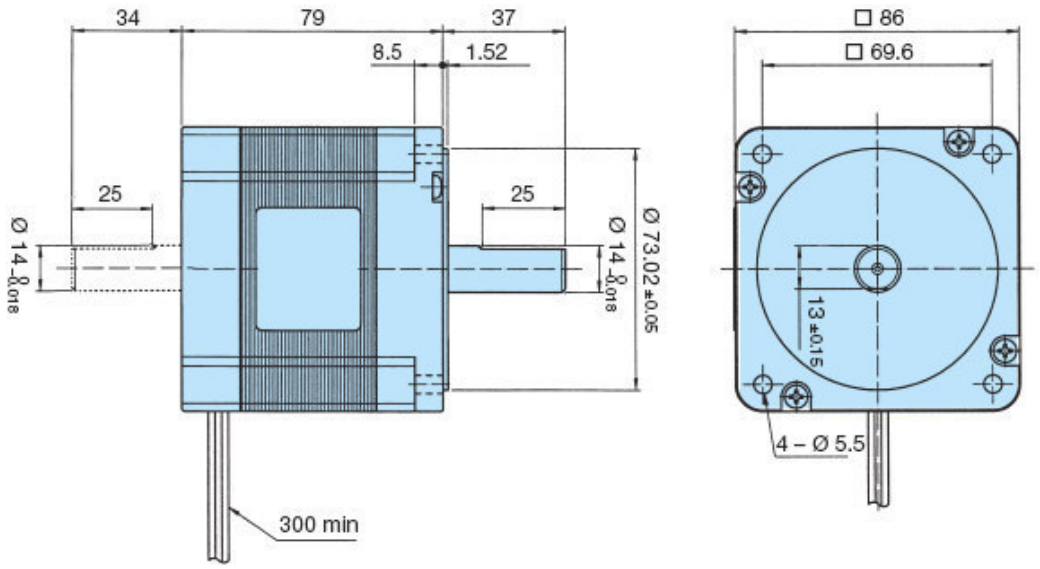
2-Phase-Stepping Motor

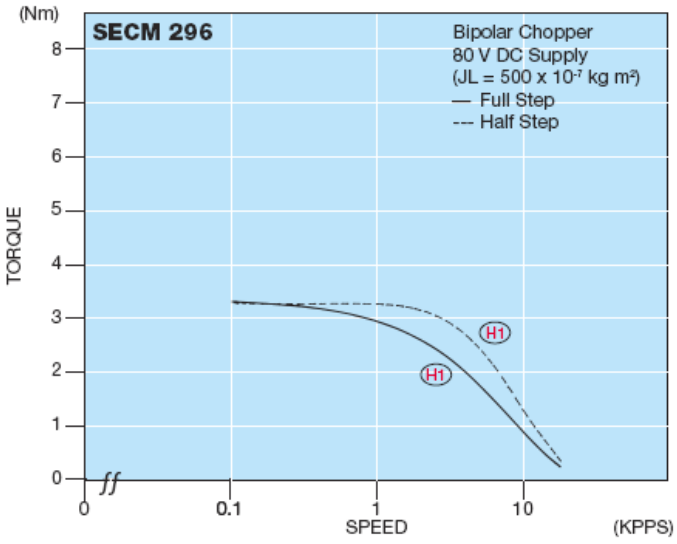
[1,8° High-Torque-Version]

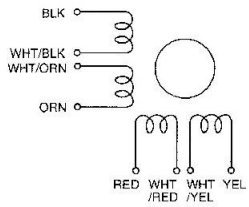
Model AE = Single Shaft BE = Double Shaft	● Bipolar Parallel				● Bipolar Serial				● Unipolar				Torque Speed-curve
	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	
SECM296-E4.5 (AE/BE)	3.70	6.4	0.2	1.6	3.70	3.2	0.8	6.4	2.75	4.5	0.4	1.6	H1

Number of Leads	Weight of Motor	Size Lenght	Rotor Inertia
8	2.1 kg	86 x 86 x 79 mm	1600 x 10 $^{-7}$ kgm²

Resistance / Phase (Ω) = ± 15%, Inductance / Phase (mH) = ± 20%







Planetary Gears are optionally available

EC Motion GmbH - Glockensprung (neu) 8 - D-41812 Erkelenz
Tel.: +49-2431-94206-0 - E-Mail: info@ec-motion.de
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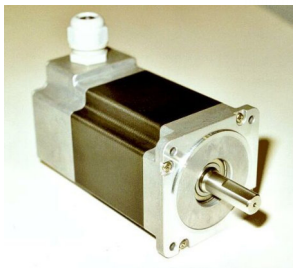


SECM296...T Series

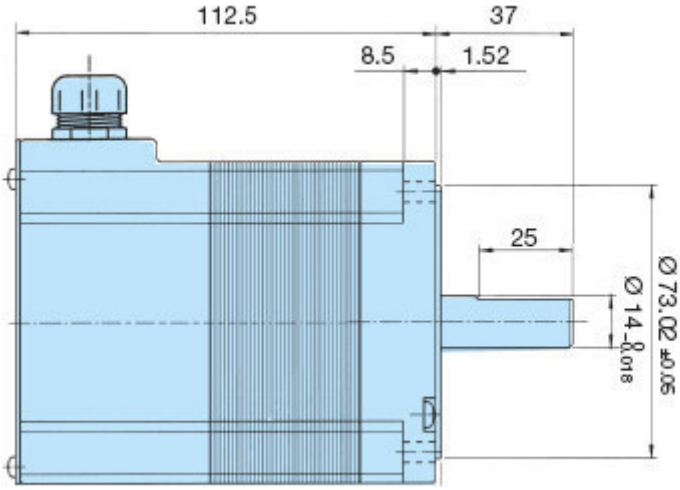
2-Phase-Stepping Motor/Terminal Box

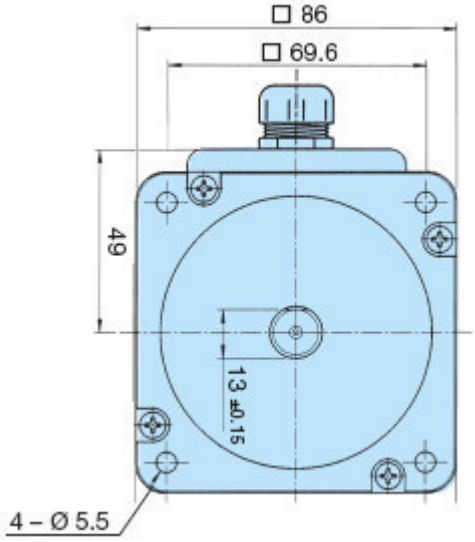
[1,8° High-Torque-Version]

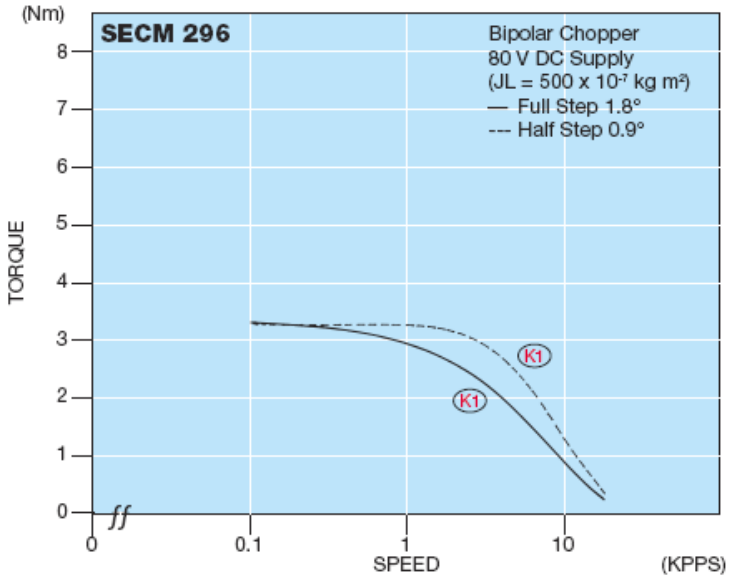
Model AE = Single Shaft T = Terminal Box	● Bipolar Parallel				● Bipolar Serial				● Unipolar				Torque Speed-curve
	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	
SECM296-E4.5AE-T	3.70	6.4	0.2	1.6	3.70	3.2	0.8	6.4	2.75	4.5	0.4	1.6	K1

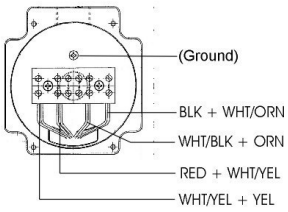
Number of Leads (Terminal Box)	Weight of Motor	Size Lenght	Rotor Inertia
8	2.5 kg	86 x 86 x 112.5 mm	1600 x 10 $^{-7}$ kgm²

Resistance / Phase (Ω) = ± 15%, Inductance / Phase (mH) = ± 20%









Planetary Gears are optionally available

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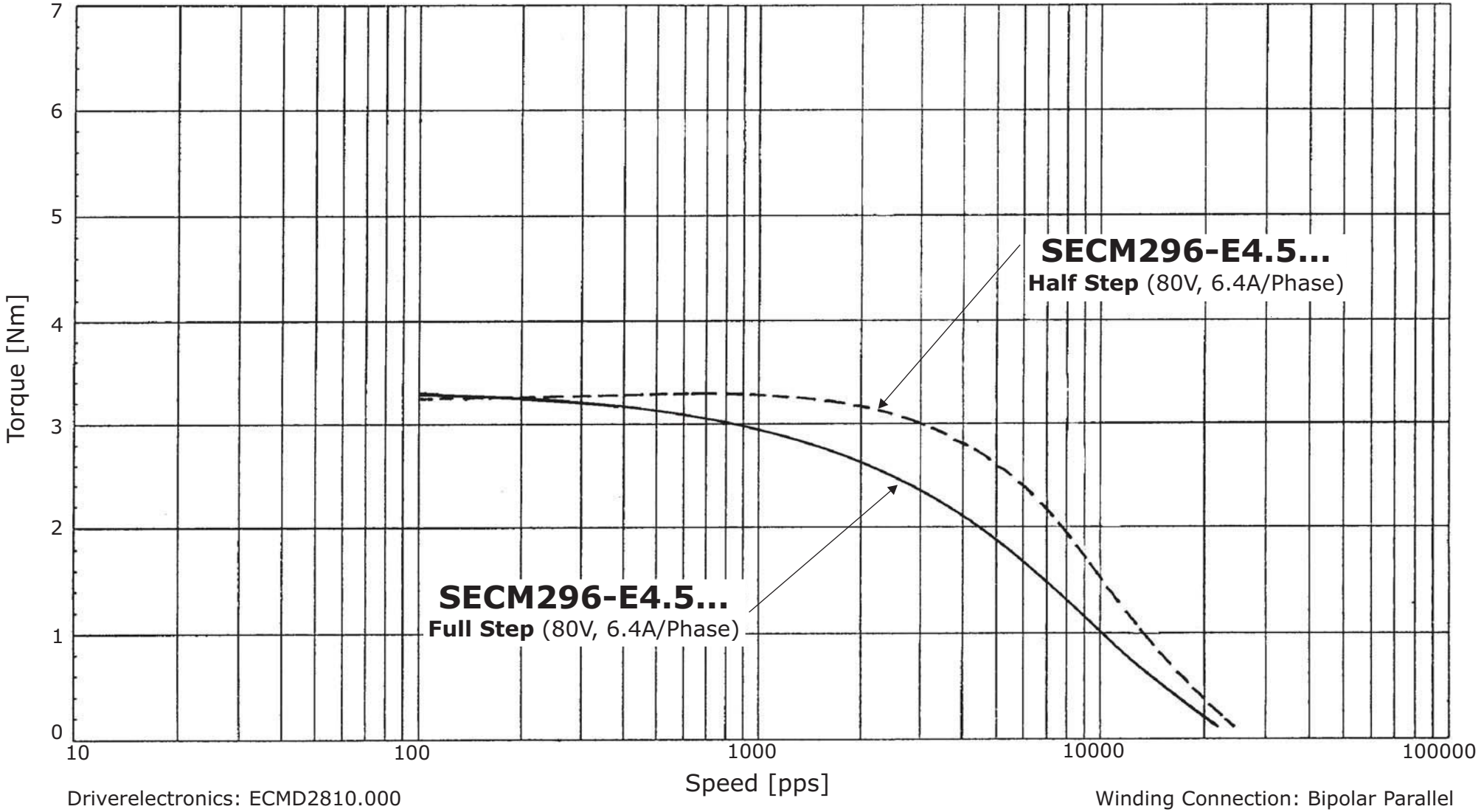
Version 06/21

Pullout Torque Curve

SECM296-E4.5A / AE / B / BE / T

A/AE = Single Shaft
B/BE = Double Shaft
T = Terminal Box



Driverelectronics: ECMD2810.000

Winding Connection: Bipolar Parallel

SECM299... Series

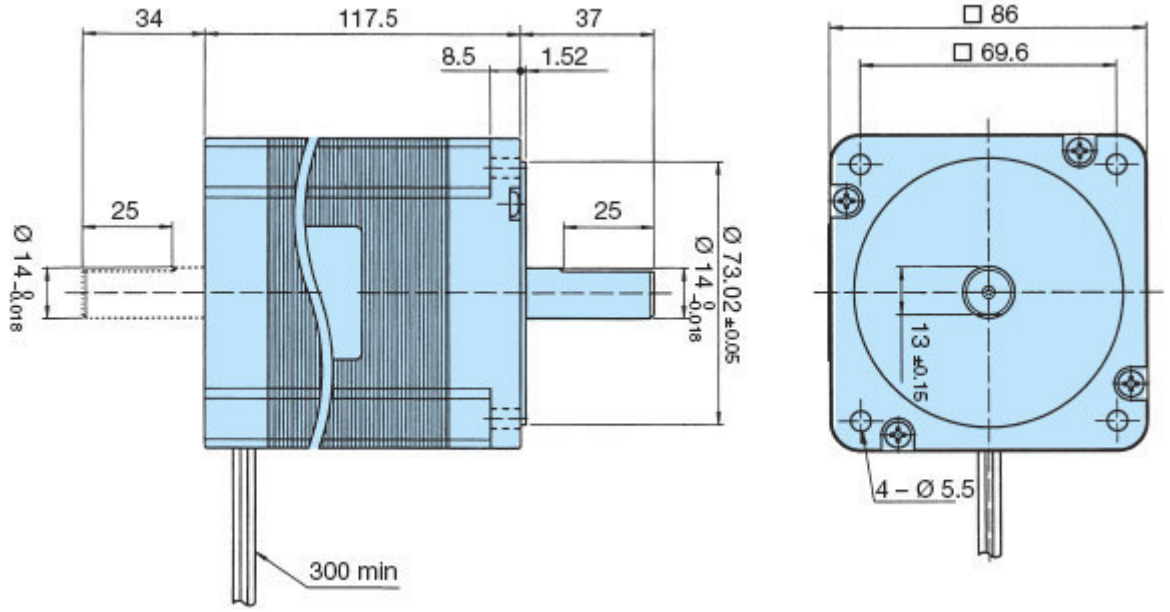
2-Phase-Stepping Motor

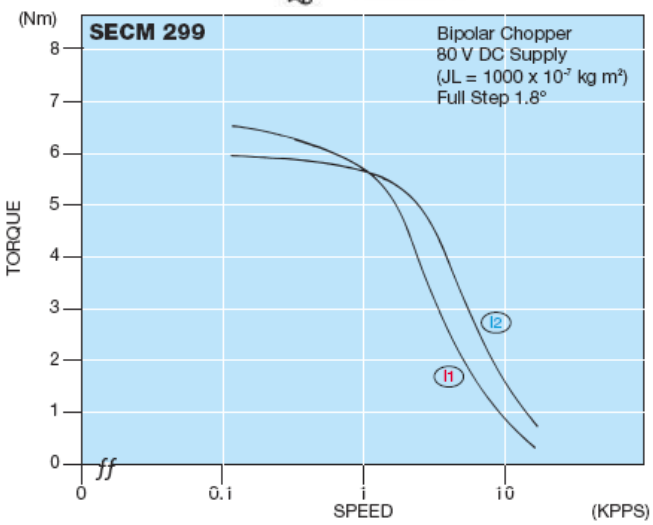
[1,8° High-Torque-Version]

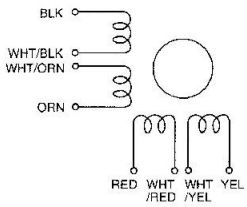
Model AE = Single Shaft BE = Double Shaft	● Bipolar Parallel				● Bipolar Serial				● Unipolar				Torque Speed-curve
	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	
SECM299-E4.5 (AE/BE)	7.30	6.4	0.3	3.1	7.30	3.2	1.2	12.4	5.40	4.5	0.6	3.1	I1
SECM299-E6.4 (AE/BE)	6.90	9.0	0.16*	1.1	6.90	4.5	0.64*	4.4	5.00	6.4	0.32*	1.1	I2

Number of Leads	Weight of Motor	Size Lenght	Rotor Inertia
8	3.5 kg	86 x 86 x 117.5 mm	3200 x 10 $^{-7}$ kgm²

Resistance / Phase (Ω) = ± 15%, (* ± 20%), Inductance / Phase (mH) = ± 20%







Planetary Gears are optionally available

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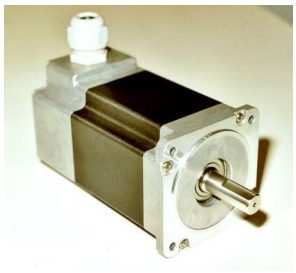


SECM299...T Series

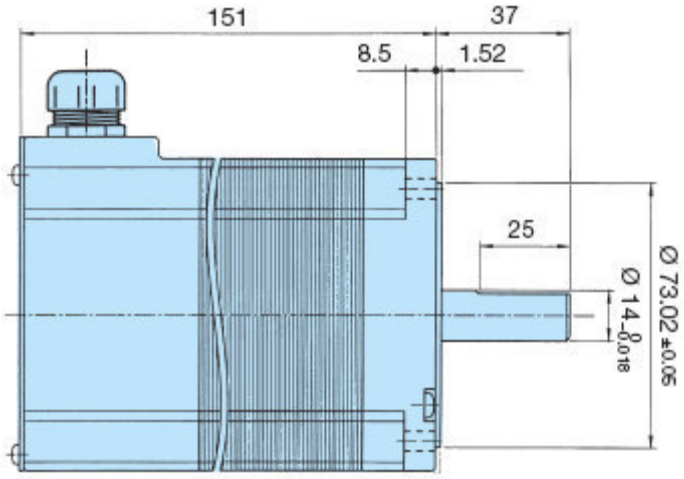
2-Phase-Stepping Motor/Terminal Box

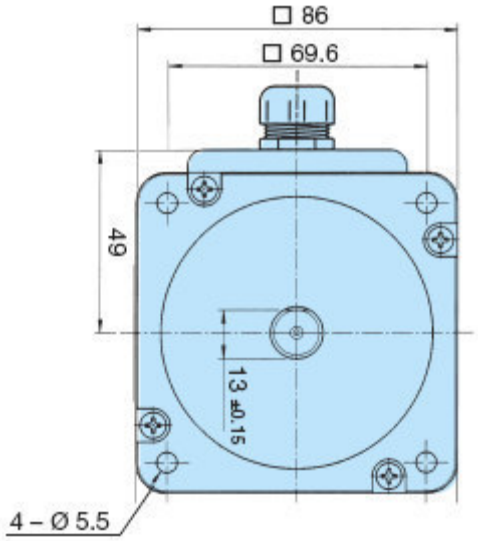
[1,8° High-Torque-Version]

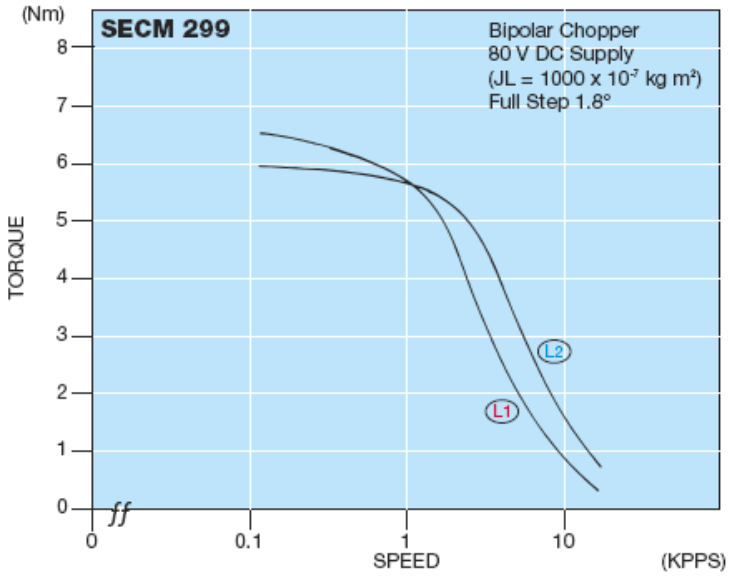
Model AE = Single Shaft T = Terminal Box	● Bipolar Parallel				● Bipolar Serial				● Unipolar				Torque Speed-curve
	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	
SECM299-E4.5AE-T	7.30	6.4	0.3	3.1	7.30	3.2	1.2	12.4	5.40	4.5	0.6	3.1	L1
SECM299-E6.4AE-T	6.90	9.0	0.16*	1.1	6.90	4.5	0.64*	4.4	5.00	6.4	0.32*	1.1	L2

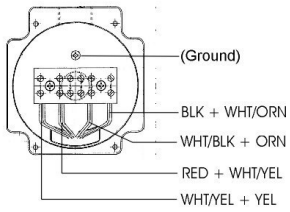
Number of Leads (Terminal Box)	Weight of Motor	Size Lenght	Rotor Inertia
8	3.9 kg	86 x 86 x 151 mm	3200 x 10^{-7} kgm²

Resistance / Phase (Ω) = ± 15%, (* ± 20%), Inductance / Phase (mH) = ± 20%









Planetary Gears are optionally available

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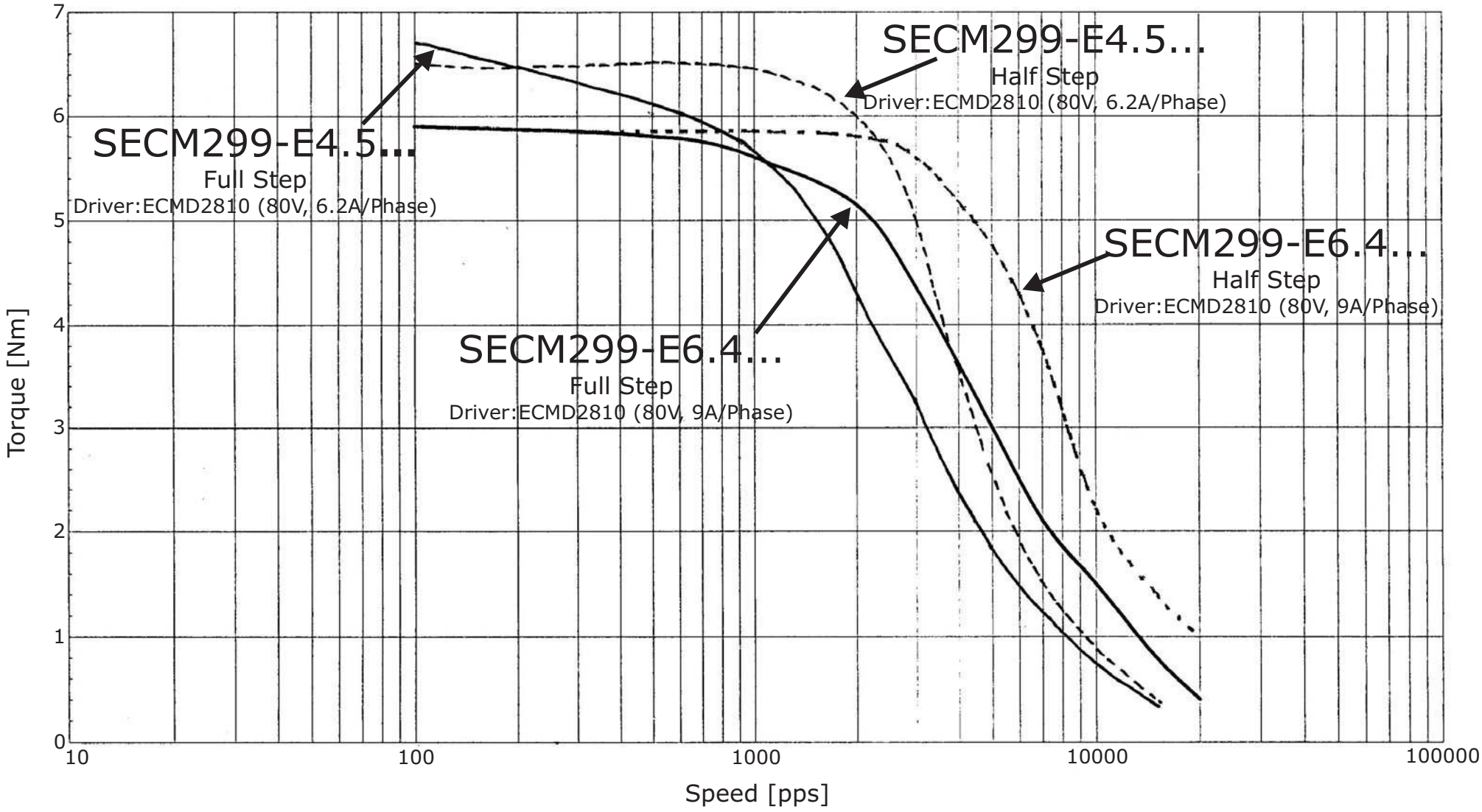
Version 06/21

Pullout Torque Curve

SECM299-E4.5A / AE / B / BE / T - SECM299-E6.4A / AE / B / BE / T

A/AE = Single Shaft
B/BE = Double Shaft
T = Terminal Box
Curve = bipolar par.



SECM2913... Series

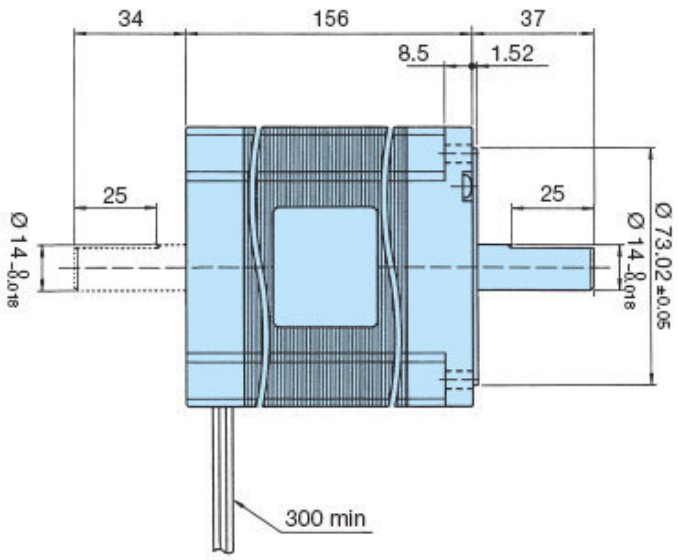
2-Phase-Stepping Motor

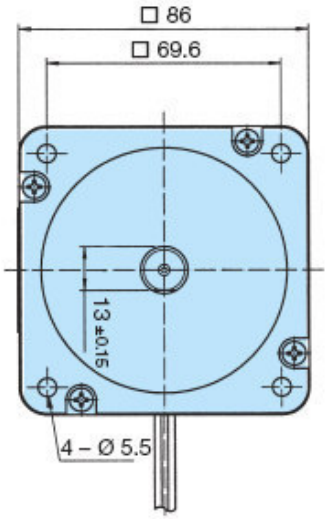
[1,8° High-Torque-Version]

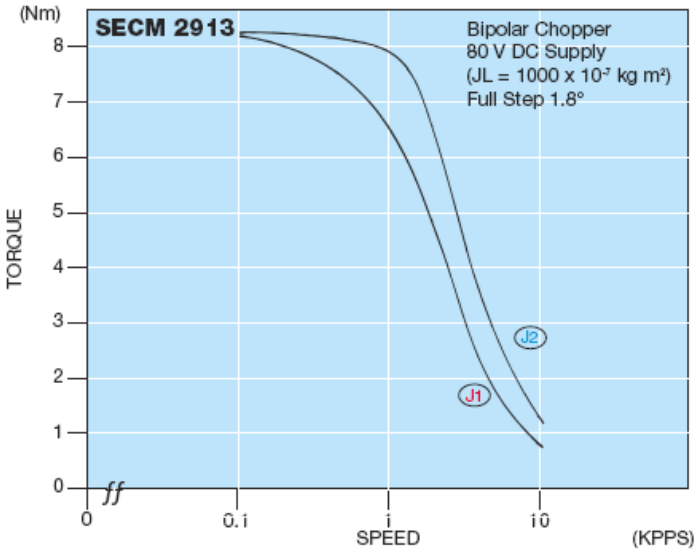
Model AE = Single Shaft BE = Double Shaft	● Bipolar Parallel				● Bipolar Serial				● Unipolar				Torque Speed-curve
	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	
SECM2913-E4.0 (AE/BE)	10.20	5.7	0.43	4.6	10.20	2.8	1.7	18.4	7.40	4.0	0.85	4.6	J1
SECM2913-E6.4 (AE/BE)	9.80	9.0	0.19*	1.7	9.80	4.5	0.76*	6.8	7.20	6.4	0.38*	1.7	J2

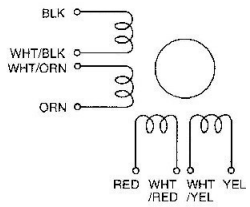
Number of Leads	Weight of Motor	Size Lenght	Rotor Inertia
8	5.0 kg	86 x 86 x 156 mm	4800 x 10 $^{-7}$ kgm²

Resistance / Phase (Ω) = ± 15%, (* ± 20%), Inductance / Phase (mH) = ± 20%









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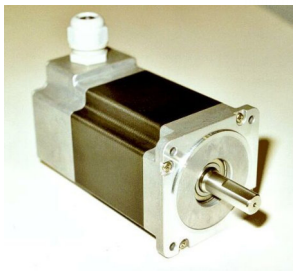


SECM2913...T Series

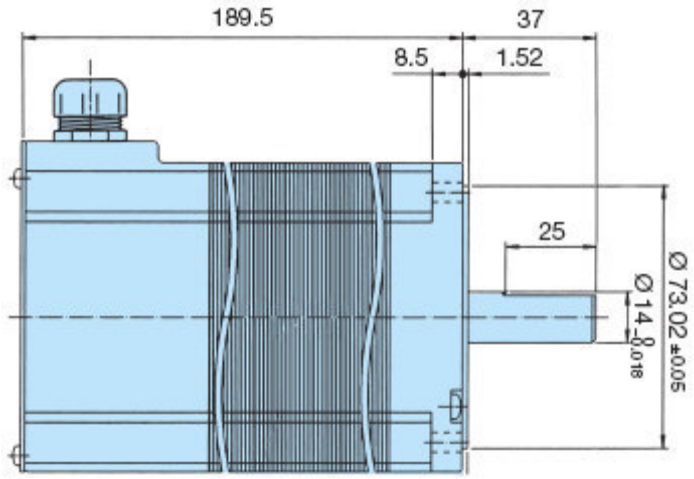
2-Phase-Stepping Motor/Terminal Box

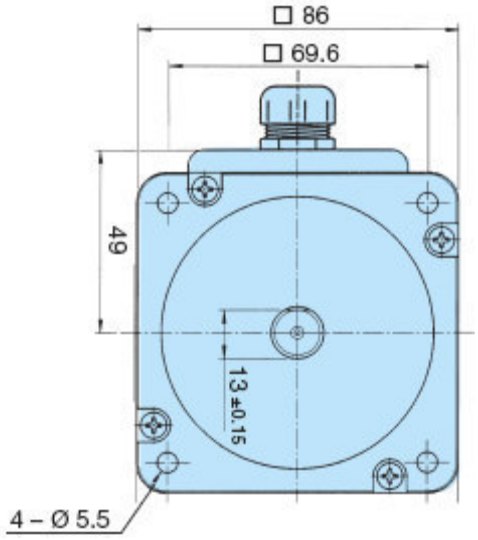
[1,8° High-Torque-Version]

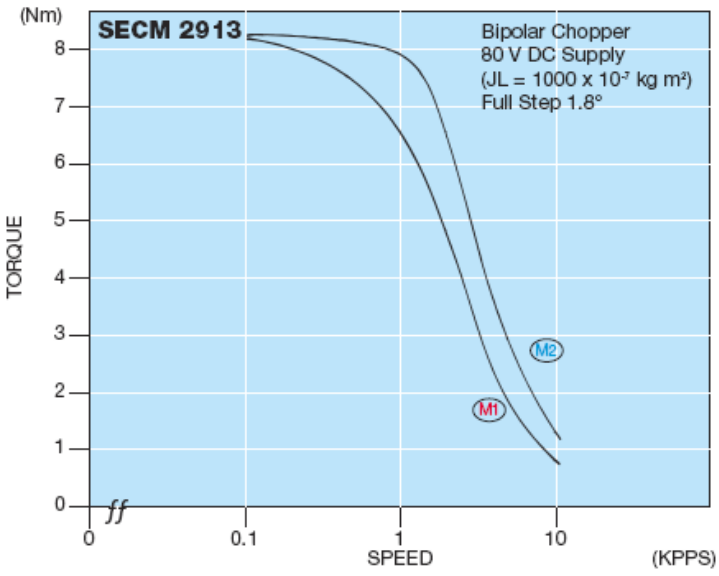
Model AE = Single Shaft T = Terminal Box	● Bipolar Parallel				● Bipolar Serial				● Unipolar				Torque Speed-curve
	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	Holding Torque [Nm]	Current/ Phase [A]	Resistance/ Phase [Ohm]	Inductance/ Phase [mH]	
SECM2913-E4.0AE-T	10.20	5.7	0.43	4.6	10.20	2.8	1.7	18.4	7.40	4.0	0.85	4.6	M1
SECM2913-E6.4AE-T	9.80	9.0	0.19*	1.7	9.80	4.5	0.76*	6.8	7.20	6.4	0.38*	1.7	M2

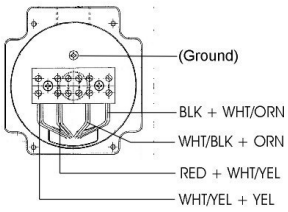
Number of Leads (Terminal Box)	Weight of Motor	Size Lenght	Rotor Inertia
8	5.4 kg	86 x 86 x 189.5 mm	4800 x 10 $^{-7}$ kgm²

Resistance / Phase (Ω) = ± 15%, (* ± 20%), Inductance / Phase (mH) = ± 20%









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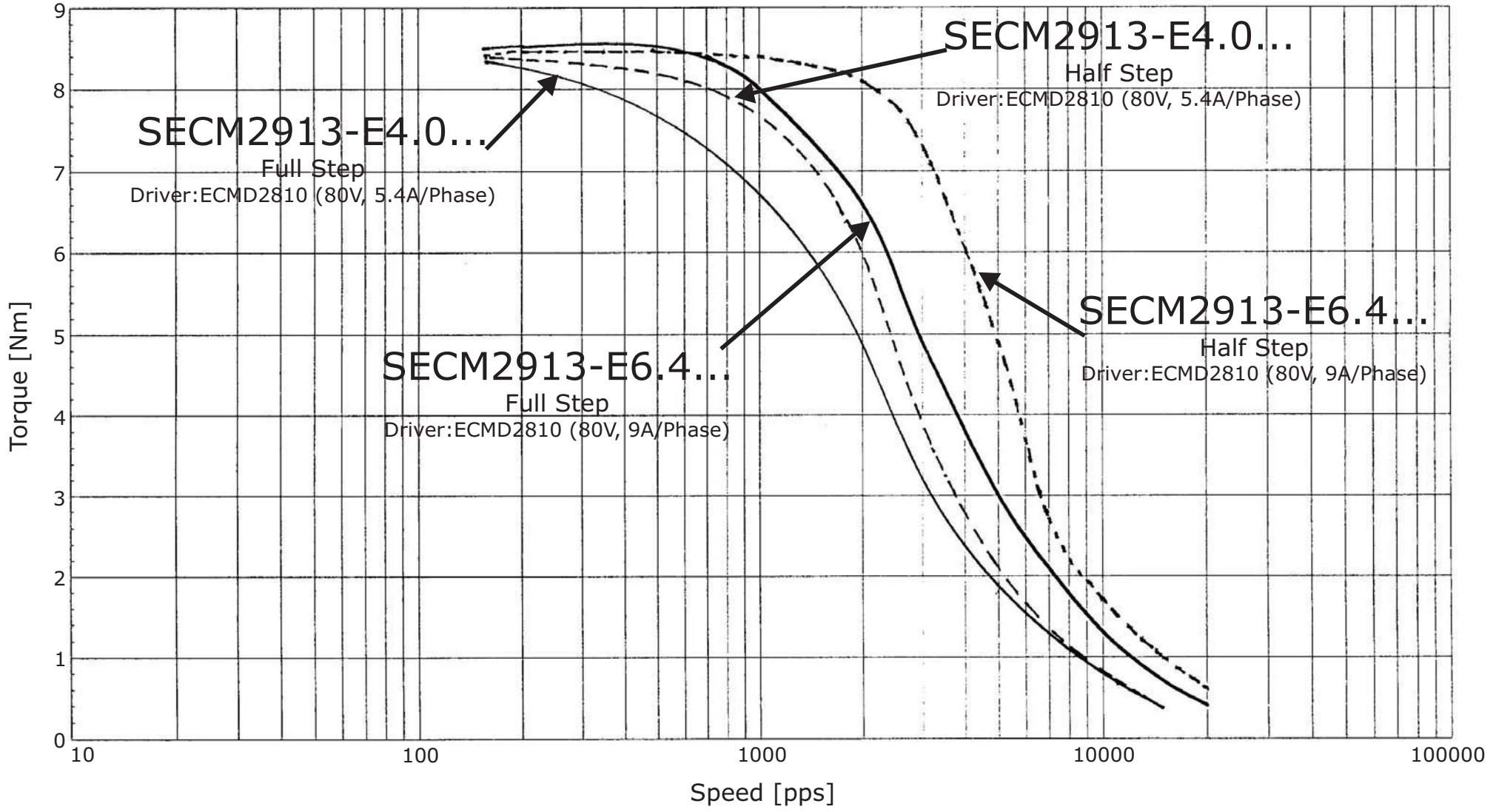
Version 06/21

Pullout Torque Curve

SECM2913-E4.0A / AE / B / BE / T - SECM2913-E6.4A / AE / B / BE / T

A/AE = Single Shaft
B/BE = Double Shaft
T = Terminal Box
Curve = bipolar par.



Product Info ECMD288

2-Phasen Leistungstreiber

- suitable for Step Motor Flange □ 56.4, 60, 86 mm
- e.g. HECM264 ... 269, SECM264 … 2913

- automatic motor set up at power

- automatic operating parameter setup
o High dynamic in the upper speed range
o High torque during acceleration
o Quiet at stand still due to StandBy Mode

- 24 ... 80 Volt, 1.5 ... 8 Ampere

- Steps / Revolution:
ideal for all common lead screw pitches (x0x)
200, 400, 500, 1000, 2000, 2500, 5000 und 10000
Optional (x2x): 200, 400, 800, 1600, 3200, 6400

- high step accuracy and constant torque step by step

- protected against over-current, over-temperature over-voltage and low voltage

- automatic current reduction at stand still

- compact metal housing

- Inputs: (opto isolator)
Puls, Direction, IN1 [Off, Reset, Gate]
Wide range input 3,5...24V, Step frequency up to 250 kHz

- Outputs: (opto isolator)
READY

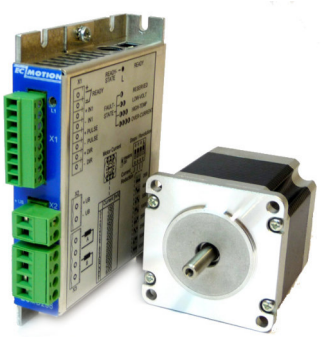
- high quality setup and connector elements
- all connections with detachable connectors
- totally silent and low resonance run
- LEDs for extensive diagnostics
- high step accuracy at every step
- active ballast circuit protects from over voltage

- Size: L:W:H 112 x 20 x 79 mm (without Heat Sink)

Variants / Order code ECMD288.xxx

.x00	0/1:	without Heat Sink / with Heat Sink.00x
	0/1:	Wall mount / with DIN railountingclip
.x2x		optional other Step Resolution

Step Motor Technology new defined



This power drive sets new standards for the digital control of stepping motors.

Utilizing a state-of-the-art digital signal processor (DSP) made it possible to develop
new procedures and control technologies.

The result is a low cost and very compact power drive especially efficient in highly dynamic applications. The robust drive is suitable for rough industrial environments.

Automatic Controller Setup: At power on, the drive electronically analyzes the motor. Next the operating parameters are automatically tuned to achieve optimal dynamic and smooth run drive performance. Consequently the power drive adjusts itself to the respective motor. Specific power drive know how is therefore not equired.

Boost and Current Reduction: A variable boost function is enabled depending on the actual acceleration rate, i.e. an additional current offset is added to the set current value. With this, higher acceleration rates are possible. The current reduction reduces the motor current at stand still to 60% of the set current value.

Dynanic Operating Parameter Adjustment: Several conditions are continuously monitored during operation and the operating parameters are automatically adjusted. As a result the constant motor torque range stretches and dynamic positioning moves are also possible in the higher speed range.

With lower speeds down to stand still the power drive gradually switches to the stand by mode. The motor is absolutely quiet and this with full torque. A big advantage for office and lab environments. The power drive design is fully digital and the phase current is measured directly in the motor windings. So this results in optimal operating performance such as low resonance run, high step angle accuracy and high and constant torque from step to step.

Product Info ECMD298

2-Phasen Leistungstreiber

- suitable for Step Motor Flange □ 56.4, 60, 86 mm
e.g. HECM264 ... 269, SECM264 ... 2913

- Automatic motor set up at power

- 24 ... 90 [max. 130] Volt, 4 ... 10Amps

-200 up to 10000 Steps/Revolution

- Wall mounting, DIN-Rail mounting

- high step accuracy and constant torque step by step

- Protection against overcurrent, overtemperature, Overvoltage, undervoltage.

- extensive status display via LEDs L1 + L2

- automatic current reduction at standstill

- compact metal housing

- Inputs: (Optically isolated)
PULSE, DIRECTION, IN1 [OFF, RESET, GATE]
Wide range signal input voltage (3.5…24)Vdc
Step frequency up to 150 kHz

- Outputs: (Optically isolated)
READY

- high quality setup and connector elements
- all connections with detachable connectors

- totally silent and low resonance run
- LEDs for extensive diagnostics
- high step accuracy at every step
- active ballast circuit protects from over voltage
- automatic fan

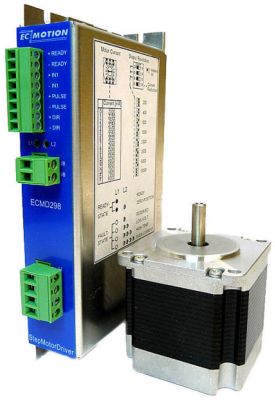
- Absolute low noise and low resonance run
- High and constant torque from step to step
- High step angle accuracy from step to step

- Dimensions : H:W:D 157 x 29 x 80 mm

Variants / Order code ECMD298.xxx

.x00 0/1: without Heat Sink / with Heat Sink
.00x 0/1: wall mount / with DIN rail mounting clip

Step Motor Technology new defined



The power drive sets new standards for the digital control of stepping motors.

Utilizing a state-of-the-art digital signal processor (DSP) made it possible to develop new procedures and control technologies.

The result is a low cost and very compact power drive especially efficient in highly dynamic applications. The robust drive is suitable for rough industrial environments.

Automatic Controller Setup: At power on, the operating parameters are automatically tuned to achieve optimal dynamic and smooth run drive performance. Consequently the power drive adjusts itself to the respective motor.

Boost and Current Reduction: A variable boost function is enabled depending on the actual acceleration rate, i.e. the motor current will be increased additionally. Higher acceleration rates are possible. The current reduction reduces the motor current at stand still to 60% of the set current value.

Dynamic Operating Parameter Adjustment: Several conditions are continuously monitored during operation and the operating parameters are automatically adjusted. The constant motor torque range stretches and dynamic positioning moves are also possible in the higher speed range.

StandBy Mode: With lower speeds down to stand still the power drive gradually switches to the stand by mode. The motor is absolutely quiet and this with full torque. A big advantage for office and lab environments.

Fan Control: According to the implemented fan the installation position is not critical

Active Ballast: This circuit decreases over voltages when motor is in deceleration state. So its possible of using simple standard power supplies.

Digital Phase Current Controller: The power drive design is fully digital and the phase current is measured directly in the motor wirings. The strict focus was here to achieve optimal operating performance such as low resonance run, high step angle accuracy and high and constant torque from step to step.