



EM3A-01 series are high speed and low inertia synchronous AC servo motors. These small-sized servo motors with a power of 100 W are used in small automatic machines, instruments and machine tools. Motors are available with optical 23-bit or magnetic 17-bit absolute encoder. The motors are suitable for applications with a maximum speed of 6000 rpm. Products can be provided with a 24VDC holding brake option.

The EM3A series boasts a low inertia design for extremely-fast response times. These motors are highlighted with the perfect combination of compact size and high torque performance, ensuring unparalleled dynamic response and precision positioning when used together with servo drivers ED3L series. Versatile and powerful, these servo drive systems has a wide range of applications, thanks to its top-tier performance, varied power range, and compact form factor. Elevate your technical operations with the EM3A series servo motors and ED3L servo drive system.

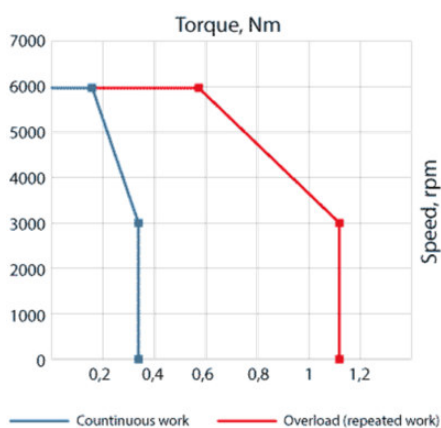
Technical data

Output power	100 W
Rated speed	3000 rpm
Maximum speed	6000 rpm
Rated torque	0.32 Nm
Maximum torque (for motor models EM3A-01AFA and EM3A-01ATA)	0.95 Nm
Maximum torque (for motor models EM3A-01ALA)	1.11 Nm
Rated current	1.1 A
Maximum current (for motor models EM3A-01AFA and EM3A-01ATA)	3.5 A
Maximum current (for motor models EM3A-01ALA)	4.0 A

Technical data

Motor inertia (motor without brake)	0.0428 kg*cm ²
Motor inertia (motor with brake)	0.0465 kg*cm ²
Allowable radial shaft load	78 N
Allowable axial shaft load	54 N
Optional brake holding torque	≥0.32 Nm
Optional brake voltage	24 VDC
Weight (motor without brake)	0.5 kg
Weight (motor with brake)	0.7 kg
Flange	40 mm

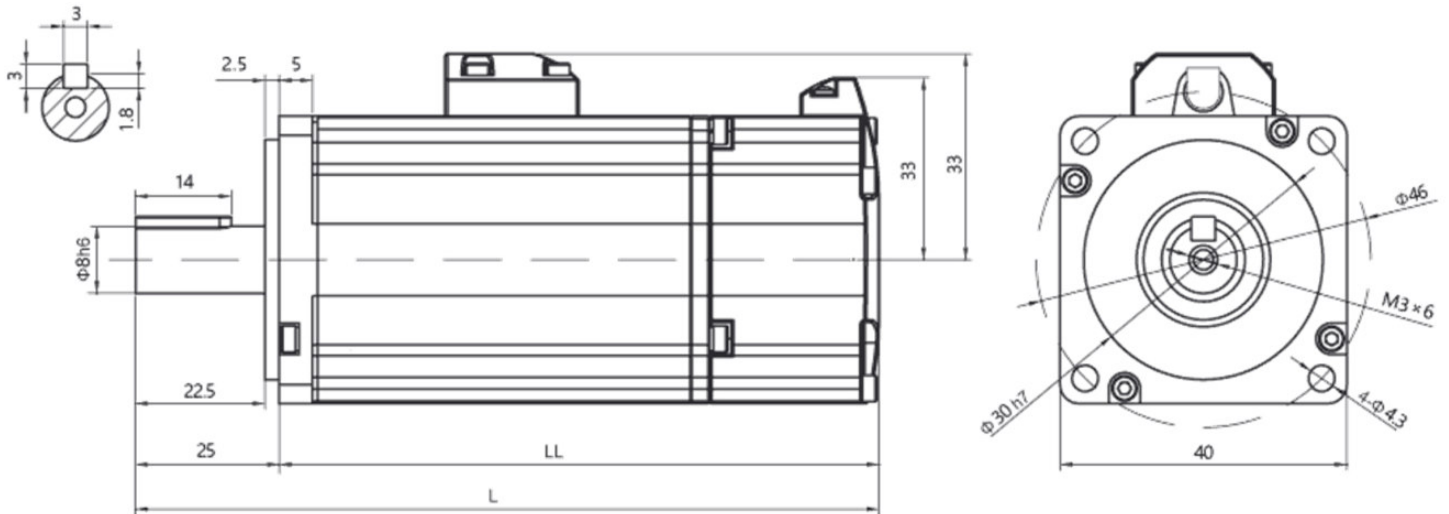
Speed-torque curves



Available motor models

Motor model	Encoder	Brake	Waterproof connector	Servo drive	Input drive supply voltage	Note
EM3A-01ALA221	absolute optic encoder, resolution 23-bit (8 388 608 ppr)	-	-	ED3L-01AMA ED3L-01AEA ED3L-01APA	Single phase AC 200V...240V	Not recommended for new projects
EM3A-01ALA241		✓	-			
EM3A-01ALA222		-	✓			
EM3A-01ALA242		✓	✓			
EM3A-01ATA221	absolute magnetic encoder, resolution 17-bit (131 072 ppr)	-	-			
EM3A-01ATA241		✓	-			
EM3A-01ATA222		-	✓			
EM3A-01ATA242		✓	✓			
EM3A-01AFA221	Incremental optic encoder, resolution 20-bit (1 048 576 ppr)	-	-			
EM3A-01AFA241		✓	-			
EM3A-01AFA222		-	✓			
EM3A-01AFA242		✓	✓			

Dimensions of AC servo motor EM3A-01



Note: The values in parentheses represent the values of motors with brakes

Motor model	L, mm	LL, mm
EM3A-01ALA22x	103.5	78.5
EM3A-01ALA24x	137	112
EM3A-01ATA22x EM3A-01AFA22x	113.5	88.5
EM3A-01ATA24x EM3A-01AFA24x	147	122

