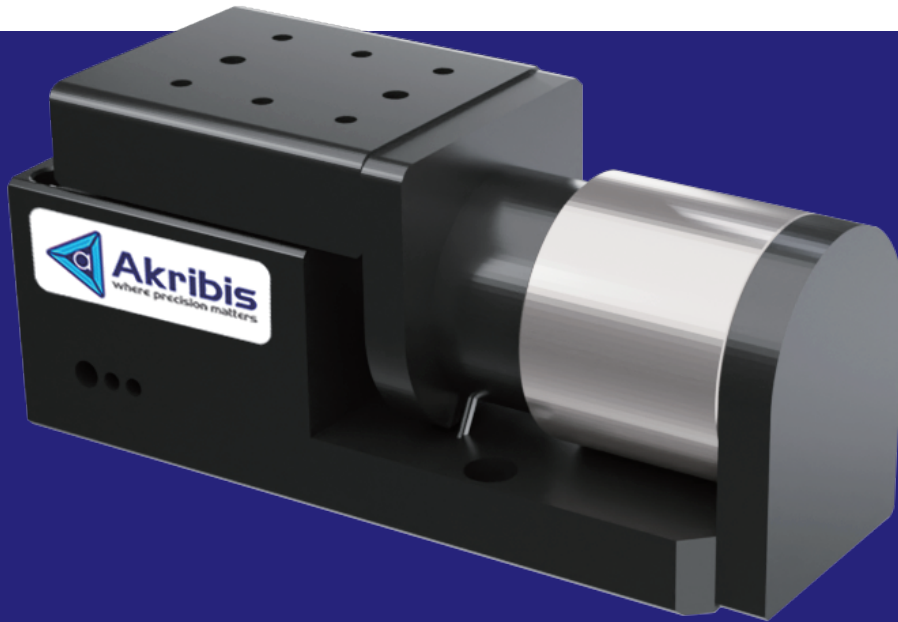




XMGV SERIES

- ▶ Zero cogging, zero backlash, ironless linear positioning module
- ▶ Stroke from 15mm to 30mm
- ▶ Suitable for high speed and high acceleration application
- ▶ Smooth motion even at low speed (minimum velocity ripple)
- ▶ Uses cross roller guide for high stiffness

EN-25.5.1

XMGV Series

Introduction

The XMGV series linear modules combines cylindrical voice coil motors, precision crossed roller ways, and linear encoder feedback to realized high performance direct-drive motion in a compact package.

The product comes in four standard sizes: XMGV30, XMGV40, XMGV60, and XMGV90 to cater to a wide range of payloads. Two different precision grades (corresponding to different bearing and feedback options) provide additional flexibility to tailor the product to your application.

The built-in voice coil motor provides smooth, cogging-free actuation, while the crossed roller ways eliminate bearing reentry noise to enable accurate tracking of low velocities.

Continuous Force $F_{cn} = 4.43\text{N} \sim 95.6\text{N}$

Peak Force $F_{pk} = 28.20\text{N} \sim 340.3\text{N}$

Features

- ▶ Direct drive, built-in cylindrical voice coil motor
- ▶ Stroke from 15mm to 30mm
- ▶ Repeatability up to $\pm 0.5\mu\text{m}$
- ▶ Optional resolution of $0.2\mu\text{m}$, $0.05\mu\text{m}$, SINCOS
- ▶ Excellent straightness and flatness, high rigidity, high dynamic performance

Applications

Applications in various industries such as automation equipment which requires point-to-point high speed positioning, z-axis optical focusing, leveling mechanism, high speed pick and place, flying probe test, material fatigue tester and others.

Voice Coil Module Series	Voice Coil Motor Series	Continuous Force (F_{cn})						Unit: N	Stroke (mm)	Repeatability (μm)	Page
		5	10	50	100	300	500				
 XMGV30	 AVM30	4.43 28.20							15	up to ± 0.5	097
 XMGV40	 AVM40	10.5 61.7							20		097
 XMGV60	 AVM60	26.8 121.6							25		098
 XMGV90	 AVM90	95.6 340.3							30		098

Note:

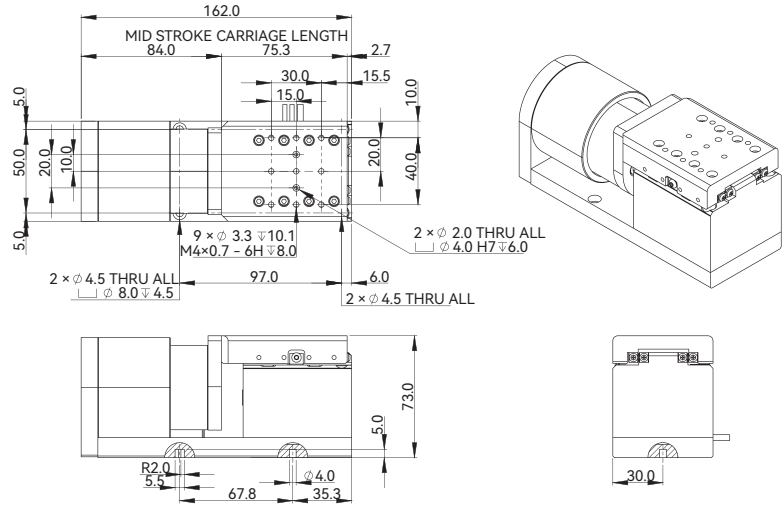
★ Products can be customized to meet specific working environments or for high frequency reciprocating motion, please contact cust-service@akribis-sys.com.

XMGV60

Motor Specifications	Unit	Value
Motor	-	AVM60-25
Continuous Force (NC) @100°C ^{1 2}	N	26.8
Peak Force ²	N	121.6
Force Constant ±10% ²	N/A	17.3
Back EMF Constant ±10% ²	V/(m/s)	17.3
Resistance @25°C ±10% ³	Ω	5.35
Inductance ±20% ⁴	mH	3.82
Continuous Current (NC) @100°C ¹	A	1.6
Peak Current	A	7.0
Max. Voltage	Vdc	60
Mechanical Specifications	Unit	Value
Precision Grade	-	P N
Stroke ⁵	mm	25
Resolution	μm	SINCOS/0.05 0.2
Repeatability	μm	±0.5 ±1.0
Horizontal Straightness	μm	±2.5
Vertical Straightness	μm	±2.5
Rated Payload ⁶	kg	4.0
No-load Moving Mass	kg	0.45
No-load Total Mass	kg	1.90
Max. Static Moment	Nm	3.4

- ¹ Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.
² The values are at mid stroke.
³ Resistance is measured by DC current with standard 0.5m lead wire.
⁴ Inductance is measured by current frequency of 1 kHz.
⁵ Stroke refers to hardstop-to-hardstop mechanical stroke. The limit sensors are positioned 0.5mm from the hardstops.
⁶ The rated load is based on the load in which the acceleration of the mass is at least 1G. The contents of datasheet are subject to change without prior notice.

■ Dimensional Drawing

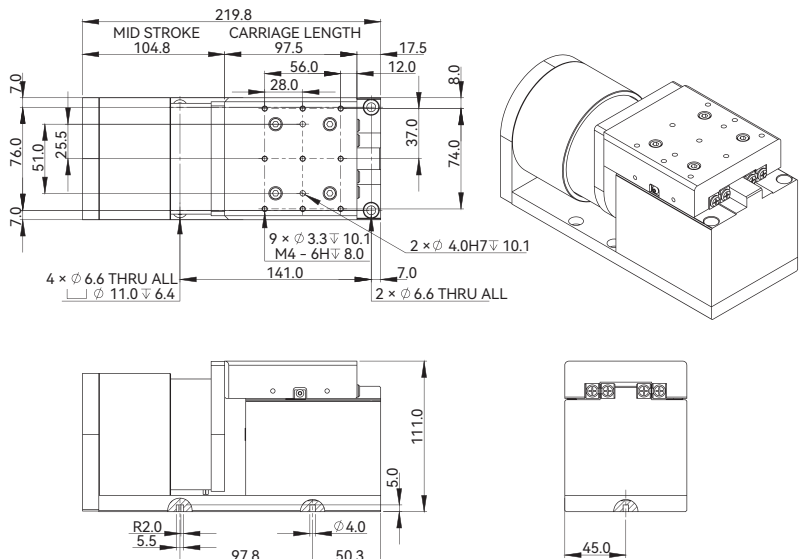


XMGV90

Motor Specifications	Unit	Value
Motor	-	AVM90-30
Continuous Force (NC) @100°C ^{1 2}	N	95.6
Peak Force ²	N	340.3
Force Constant ±10% ²	N/A	23.9
Back EMF Constant ±10% ²	V/(m/s)	23.9
Resistance @25°C ±10% ³	Ω	2.73
Inductance ±20% ⁴	mH	3.80
Continuous Current (NC) @100°C ¹	A	4.0
Peak Current	A	14.0
Max. Voltage	Vdc	120
Mechanical Specifications	Unit	Value
Precision Grade	-	P N
Stroke ⁵	mm	30
Resolution	μm	SINCOS/0.05 0.2
Repeatability	μm	±0.5 ±1.0
Horizontal Straightness	μm	±2.5
Vertical Straightness	μm	±2.5
Rated Payload ⁶	kg	14.0
No-load Moving Mass	kg	1.63
No-load Total Mass	kg	5.31
Max. Static Moment	Nm	16.0

- ¹ Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.
² The values are at mid stroke.
³ Resistance is measured by DC current with standard 0.5m lead wire.
⁴ Inductance is measured by current frequency of 1 kHz.
⁵ Stroke refers to hardstop-to-hardstop mechanical stroke. The limit sensors are positioned 0.5mm from the hardstops.
⁶ The rated load is based on the load in which the acceleration of the mass is at least 1G. The contents of datasheet are subject to change without prior notice.

■ Dimensional Drawing



Ordering Part Number (OPN)

XMGV30-T15-A0G4-A1

Model:

- XMGV30
- XMGV40
- XMGV60
- XMGV90

Precision Grade:

- Unmarked: Normal

Cover Type:

- T: Standard (Black Anodized)

Stroke (Corresponding Models):

- 15: 15mm (XMGV30)
- 20: 20mm (XMGV40)
- 25: 25mm (XMGV60)
- 30: 30mm (XMGV90)

Termination:

- 1: Motor: Flying Leads/Encoder: DSUB 15

Cable Length:

- A: 0.5m

Scale Type:

- 4: Nickel, 14ppm/K

Encoder Type:

- A0G: ABI-21 (0.2µm)

XMGV30P-T15-R0A2-A1

Model:

- XMGV30
- XMGV40
- XMGV60
- XMGV90

Precision Grade:

- P: Precision

Cover Type:

- T: Standard (Black Anodized)

Stroke (Corresponding Models):

- 15: 15mm (XMGV30)
- 20: 20mm (XMGV40)
- 25: 25mm (XMGV60)
- 30: 30mm (XMGV90)

Termination:

- 1: Motor: Flying Leads/Encoder: DSUB 15

Cable Length:

- A: 0.5m

Scale Type:

- 2: Glass G8 Soda Lime, 8ppm/K

Encoder Type:

- R0A: ATOM2, SINCOS (1Vpp)
- R0J: ATOM2, TTL (0.05µm)

Note:

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