



XMZ130 Series Linear Module

- ▶ High precision
- ▶ Anti-creep cross roller guide rail
- ▶ Magnetic spring gravity balance design
- ▶ Ironless linear motor
- ▶ Moving magnet design

EN-24.7.1

Introduction

The XMZ130 series module is a Z-axis module, which is equipped with the XRL130 linear module and magnetic spring gravity compensation module to achieve Z-axis motion. Magnetic spring gravity compensation does not require compressed air, but has compact structure, fast response, high module accuracy and stable operation.

Continuous Force $F_{cn} = 26.4\text{N}$

Peak Force $F_{pk} = 132.0\text{N}$

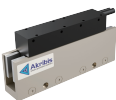
Features

- ▶ Anti-creep cross roller guide for Z-direction motion.
- ▶ Ironless linear motor has no cogging force.
- ▶ Moving magnet design facilitates cable management.
- ▶ The magnetic spring balances the Z-axis module, providing stable gravity compensation over the stroke range. No additional power supply or compressed air required.
- ▶ The weight and travel are optional.

Applications

The XMZ130 series module is used as Z-axis and can also be used in stacked with the XRL series module.

Typical scanning or point-to-point applications, sensor testing and calibration, alignment, and pickup and placement assembly. Semiconductor, industrial and scientific research projects that require high precision such as precision laser processing, laser cutting, optical focusing, optical chip coupling, wafer inspection, surface roughness inspection, etc.

Linear Module Series	Linear Motor Series	■ Continuous Force (F_{cn}) ■ Peak Force (F_{pk})						Unit: N	Stroke (mm)	Repeatability (μm)	Page
		25.0	50.0	75.0	100.0	125.0	150.0				
 XMZ130	 AUM2-S3	26.4 132.0							35/60	± 0.3	3

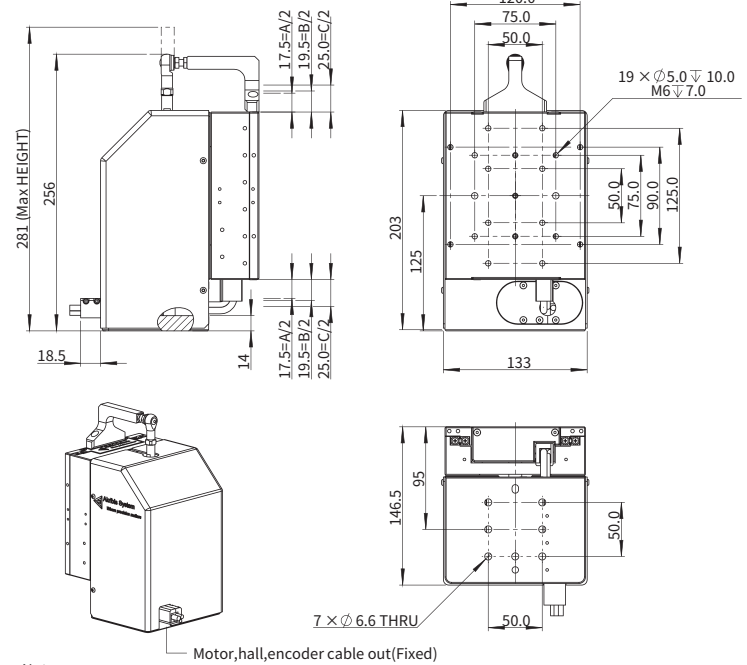
XMZ130 Series

XMZ130-35

Motor Specifications	Unit	Value		
Motor	-	AUM2-S3		
Continuous Force	N	26.4		
Peak Force	N	132.0		
Force Constant $\pm 10\%$	N/Arms	16.5		
Back EMF Constant $\pm 10\%$	Vpeak/(m/s)	13.5		
Mechanical Specifications	Unit	Value		
Precision Grade	-	N		
Stroke	mm	35		
Resolution	μm	0.1		
Repeatability	μm	± 0.3		
Horizontal Straightness	μm	± 2.0		
Vertical Straightness	μm	± 2.5		
Rated Payload ^①	kg	4.3	3.3	2.3
No-load Moving Mass	kg	1.7		
No-load Total Mass	kg	5.2		
Max. Allowable Roll Moment	Nm	3.0		
Max. Allowable Pitch Moment	Nm	3.5		
Max. Allowable Yaw Moment	Nm	4.0		

① Affected by the actual output force of the magnetic spring, the Maximum deviation of the rated load is $\pm 12\%$.
 ★ All values are measured based on module fully mounted on a 5 μm granite table.
 All values are measured according to Akribis measuring standard.

Dimensional Drawing



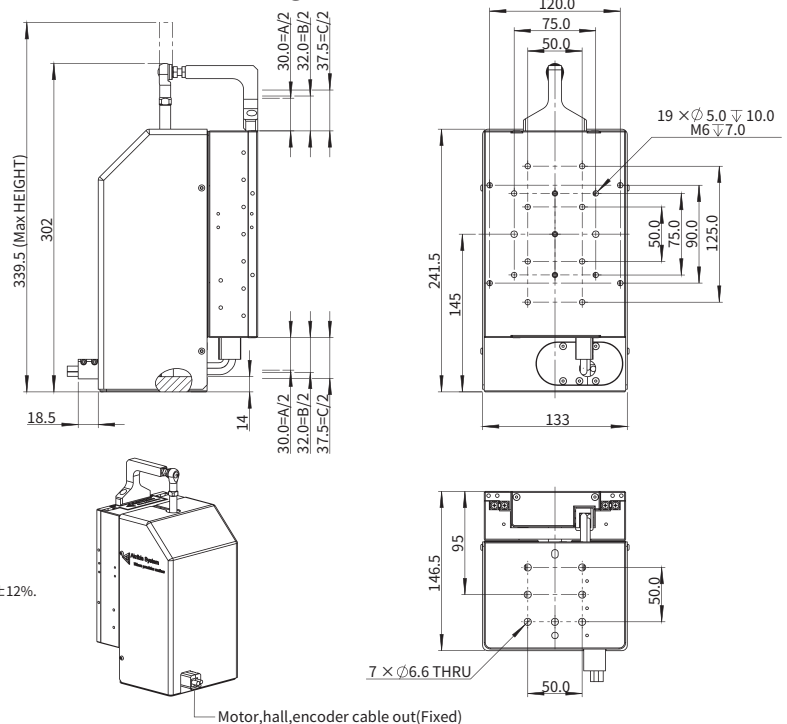
Note:
 1.A=Effective stroke
 B=Limit stroke
 C=Hardstop stroke
 2.Home index near the center of stroke;
 3.To maintain accuracy, mounting surface must be flat within 5um over stage entire footprint.

XMZ130-60

Motor Specifications	Unit	Value		
Motor	-	AUM2-S3		
Continuous Force	N	26.4		
Peak Force	N	132.0		
Force Constant $\pm 10\%$	N/Arms	16.5		
Back EMF Constant $\pm 10\%$	Vpeak/(m/s)	13.5		
Mechanical Specifications	Unit	Value		
Precision Grade	-	N		
Stroke	mm	60		
Resolution	μm	0.1		
Repeatability	μm	± 0.3		
Horizontal Straightness	μm	± 2.0		
Vertical Straightness	μm	± 2.5		
Rated Payload ^①	kg	4.1	3.1	2.1
No-load Moving Mass	kg	1.9		
No-load Total Mass	kg	6.0		
Max. Allowable Roll Moment	Nm	4.0		
Max. Allowable Pitch Moment	Nm	4.5		
Max. Allowable Yaw Moment	Nm	5.0		

① Affected by the actual output force of the magnetic spring, the Maximum deviation of the rated load is $\pm 12\%$.
 ★ All values are measured based on module fully mounted on a 5 μm granite table.
 All values are measured according to Akribis measuring standard.

Dimensional Drawing



Note:
 1.A=Effective stroke
 B=Limit stroke
 C=Hardstop stroke
 2.Home index near the center of stroke;
 3.To maintain accuracy, mounting surface must be flat within 5um over stage entire footprint.

Ordering Part Number (OPN)

XMZ130-T03-U04-R2H1-D2-G43-

Model:

XMZ130^①

Country of Origin:

Blank/SG^②

Cover Type:

T: Standard (Black Anodized)

Counter Mass:^②

G43: 4.3kg
G33: 3.3kg
G23: 2.3kg
G41: 4.1kg
G31: 3.1kg
G21: 2.1kg

Stroke:

03: 35mm
06: 60mm

Termination:

1: Motor: Flying Leads/Encoder: DSUB 15/Hall: DSUB 9
2: Motor: DSUB 9W4/Encoder: DSUB 15/Hall: DSUB 9

Motor Type:

U04: AUM2-S-S3-K Peak Force: 132.0N

Cable Length:

D: 1.0m

Encoder Type:

R2H: Quantic (0.1μm)

Scale Type:

1: Steel tape, 11ppm/K

① P-level precision module XMZ130P can be customized, please contact cust-service@akribis-sys.com

② Balanced load of magnetic spring: XMZ130 35 : 4.3kg/3.3kg/2.3kg; XMZ130 60 : 4.1kg/3.1kg/2.1kg

③ Blank=Default
SG=Singapore