



XRB Series Servo Module

- ▶ High rigidity
- ▶ Anti-creep cross roller guide rail
- ▶ Servo motor driving
- ▶ High precision optical encoder
- ▶ Power-off self-locking (braking)

EN-24.7.1

Introduction

XRB series servo motor module uses servo motor encoder and high precision optical encoder to form a double feedback system to improve module accuracy. The XRB series module mainly considers the Z-axis motion design. Servo motor with brake (power off self-locking). The XRB series modules can also be used for horizontal motion. It can meet the needs of a variety of working conditions.

Rated Torque $T_n = 0.32\text{Nm} \sim 0.64\text{Nm}$

Peak Torque $T_m = 0.96\text{Nm} \sim 1.91\text{Nm}$

Features

- ▶ Anti-creep cross roller guide for Z-direction motion.
- ▶ Servo motor driving. Ball-screw drive mechanism.
- ▶ High precision optical encoder double feedback system is used to improve module accuracy.
- ▶ The power-off self-locking function of the servo motor with brake protects the load in Z-direction motion.
- ▶ No counterweight required for Z-axis motion. High rigidity.

Applications

The XRB series modules can be used as the Z-axis in gantry and granite stage.

High precision positioning in semiconductor, solar PV, lithium battery, LCD display equipment. Short stroke jog and typical scanning applications.

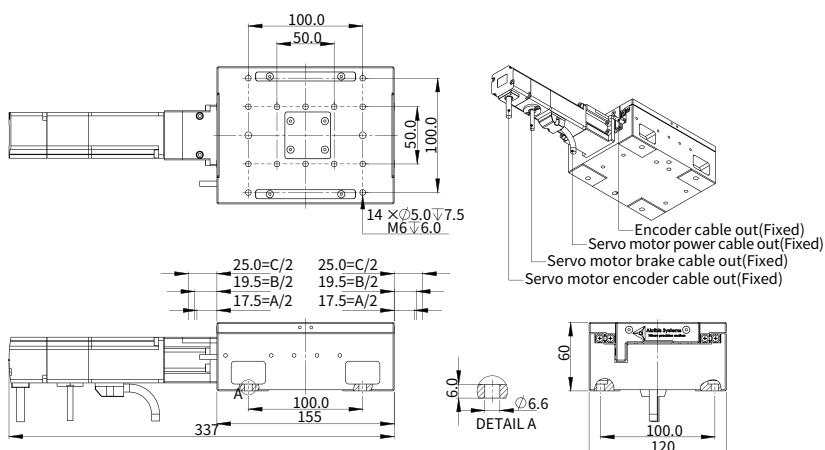
Servo Module Series	Servo Motor Series	■ Motor Rated Torque (T_n) ■ Motor Peak Torque (T_m) Unit: Nm						Stroke (mm)	Repeatability (μm)	Page
		0.40	0.80	1.20	1.60	2.00	2.40			
 XRB120	APM-SA01ADK2	0.32 0.96						35/60/ 110/160	±0.5	3
 XRB190	APM-SB02ADK2	0.64 1.91						35/60/ 110/160		5

XRB120-35

Motor Specifications	Unit	Value
Motor Power	W	100
Motor Rated Torque	Nm	0.32
Motor Peak Torque	Nm	0.96
Screw Lead	mm	4
Max.imum Velocity	mm/s	200
Mechanical Specifications	Unit	Value
Precision Grade	-	N
Stroke	mm	35
Resolution	μm	0.1
Repeatability	μm	±0.5
Horizontal Straightness	μm	±2.5
Vertical Straightness	μm	±3.0
Rated Payload(Vertical)	kg	7.0
No-load Moving Mass	kg	0.9
No-load Total Mass	kg	3.2
Max. Allowable Roll Moment	Nm	3.0
Max. Allowable Pitch Moment	Nm	3.0
Max. Allowable Yaw Moment	Nm	3.0

★ All values are measured based on module fully mounted on a 8μm table.
All values are measured according to Akribis measuring standard.

■ Dimensional Drawing



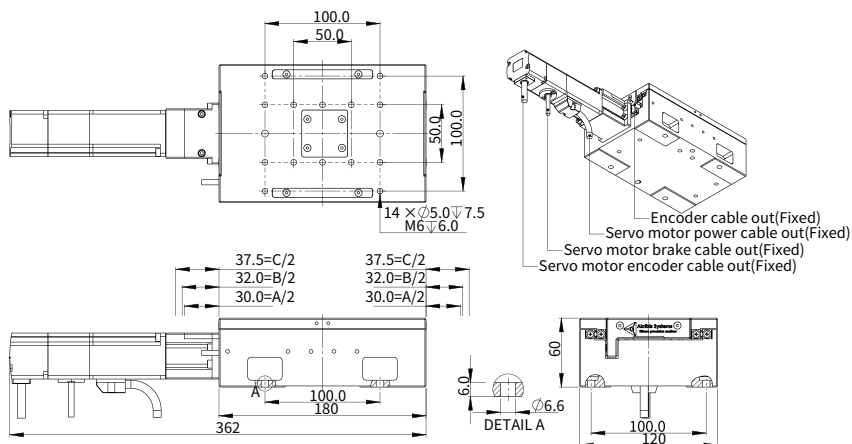
Note:
1.A=Effective stroke
B=Limit stroke
C=Hardstop stroke
2.Home index near the center of stroke.
3.To maintain accuracy,mounting surface must be flat within 8μm over stage entire footprint.

XRB120-60

Motor Specifications	Unit	Value
Motor Power	W	100
Motor Rated Torque	Nm	0.32
Motor Peak Torque	Nm	0.96
Screw Lead	mm	4
Max.imum Velocity	mm/s	200
Mechanical Specifications	Unit	Value
Precision Grade	-	N
Stroke	mm	60
Resolution	μm	0.1
Repeatability	μm	±0.5
Horizontal Straightness	μm	±2.5
Vertical Straightness	μm	±3.0
Rated Payload(Vertical)	kg	9.0
No-load Moving Mass	kg	1.1
No-load Total Mass	kg	3.5
Max. Allowable Roll Moment	Nm	3.0
Max. Allowable Pitch Moment	Nm	4.0
Max. Allowable Yaw Moment	Nm	4.0

★ All values are measured based on module fully mounted on a 8μm table.
All values are measured according to Akribis measuring standard.

■ Dimensional Drawing



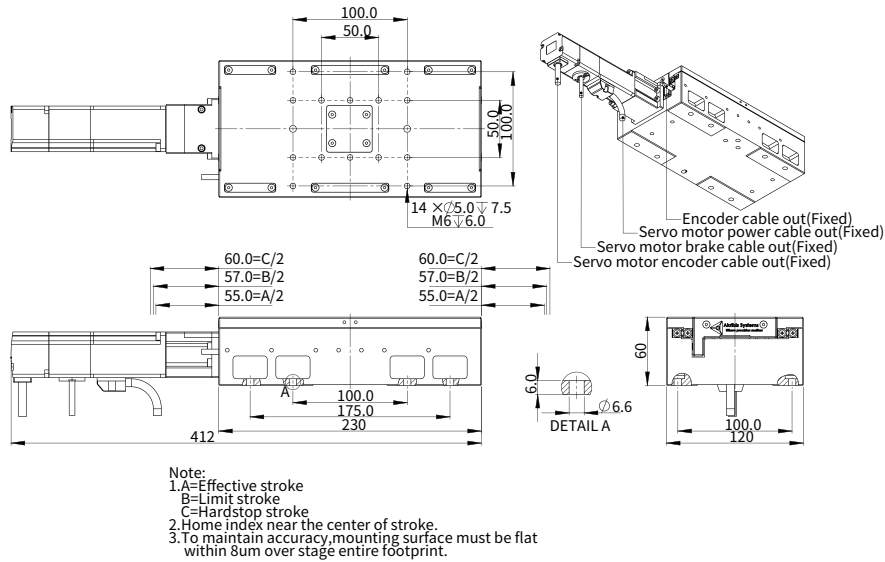
Note:
1.A=Effective stroke
B=Limit stroke
C=Hardstop stroke
2.Home index near the center of stroke.
3.To maintain accuracy,mounting surface must be flat within 8μm over stage entire footprint.

XRB120-110

Motor Specifications	Unit	Value
Motor Power	W	100
Motor Rated Torque	Nm	0.32
Motor Peak Torque	Nm	0.96
Screw Lead	mm	4
Max.imum Velocity	mm/s	200
Mechanical Specifications	Unit	Value
Precision Grade	-	N
Stroke	mm	110
Resolution	μm	0.1
Repeatability	μm	±0.5
Horizontal Straightness	μm	±2.5
Vertical Straightness	μm	±3.0
Rated Payload(Vertical)	kg	10.0
No-load Moving Mass	kg	1.3
No-load Total Mass	kg	4.0
Max. Allowable Roll Moment	Nm	4.0
Max. Allowable Pitch Moment	Nm	8.0
Max. Allowable Yaw Moment	Nm	8.0

★ All values are measured based on module fully mounted on a 8μm table.
All values are measured according to Akribis measuring standard.

■ Dimensional Drawing

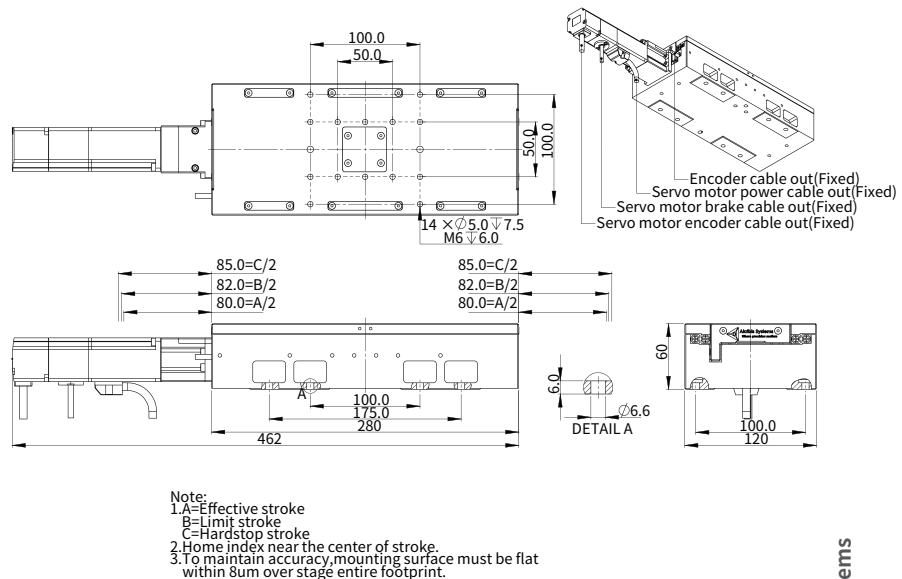


XRB120-160

Motor Specifications	Unit	Value
Motor Power	W	100
Motor Rated Torque	Nm	0.32
Motor Peak Torque	Nm	0.96
Screw Lead	mm	4
Max.imum Velocity	mm/s	200
Mechanical Specifications	Unit	Value
Precision Grade	-	N
Stroke	mm	160
Resolution	μm	0.1
Repeatability	μm	±0.5
Horizontal Straightness	μm	±2.5
Vertical Straightness	μm	±3.0
Rated Payload(Vertical)	kg	10.0
No-load Moving Mass	kg	1.5
No-load Total Mass	kg	4.7
Max. Allowable Roll Moment	Nm	5.0
Max. Allowable Pitch Moment	Nm	10.0
Max. Allowable Yaw Moment	Nm	10.0

★ All values are measured based on module fully mounted on a 8μm table.
All values are measured according to Akribis measuring standard.

■ Dimensional Drawing

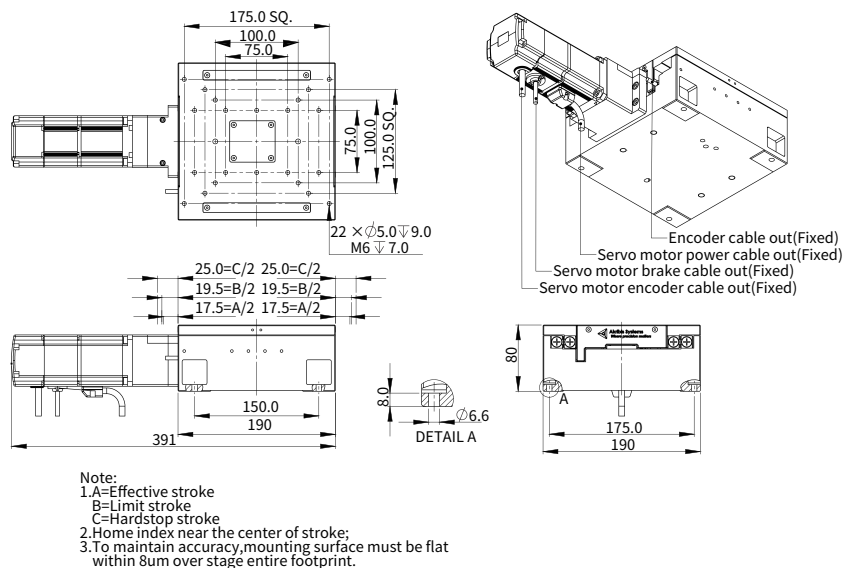


XRB190-35

Motor Specifications	Unit	Value
Motor Power	W	200
Motor Rated Torque	Nm	0.64
Motor Peak Torque	Nm	1.91
Screw Lead	mm	5
Max.imum Velocity	mm/s	250
Mechanical Specifications	Unit	Value
Precision Grade	-	N
Stroke	mm	35
Resolution	μm	0.1
Repeatability	μm	±0.5
Horizontal Straightness	μm	±2.5
Vertical Straightness	μm	±3.0
Rated Payload(Vertical)	kg	10.0
No-load Moving Mass	kg	2.2
No-load Total Mass	kg	7.8
Max. Allowable Roll Moment	Nm	15.0
Max. Allowable Pitch Moment	Nm	10.0
Max. Allowable Yaw Moment	Nm	10.0

★ All values are measured based on module fully mounted on a 8μm table.
All values are measured according to Akribis measuring standard.

■ Dimensional Drawing

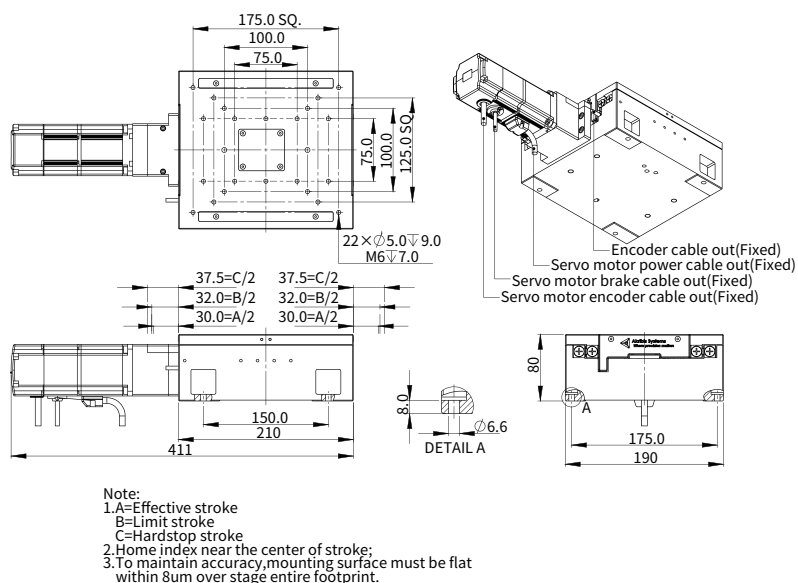


XRB190-60

Motor Specifications	Unit	Value
Motor Power	W	200
Motor Rated Torque	Nm	0.64
Motor Peak Torque	Nm	1.91
Screw Lead	mm	5
Max.imum Velocity	mm/s	250
Mechanical Specifications	Unit	Value
Precision Grade	-	N
Stroke	mm	60
Resolution	μm	0.1
Repeatability	μm	±0.5
Horizontal Straightness	μm	±2.5
Vertical Straightness	μm	±3.0
Rated Payload(Vertical)	kg	15.0
No-load Moving Mass	kg	2.5
No-load Total Mass	kg	8.4
Max. Allowable Roll Moment	Nm	18.0
Max. Allowable Pitch Moment	Nm	15.0
Max. Allowable Yaw Moment	Nm	15.0

★ All values are measured based on module fully mounted on a 8μm table.
All values are measured according to Akribis measuring standard.

■ Dimensional Drawing

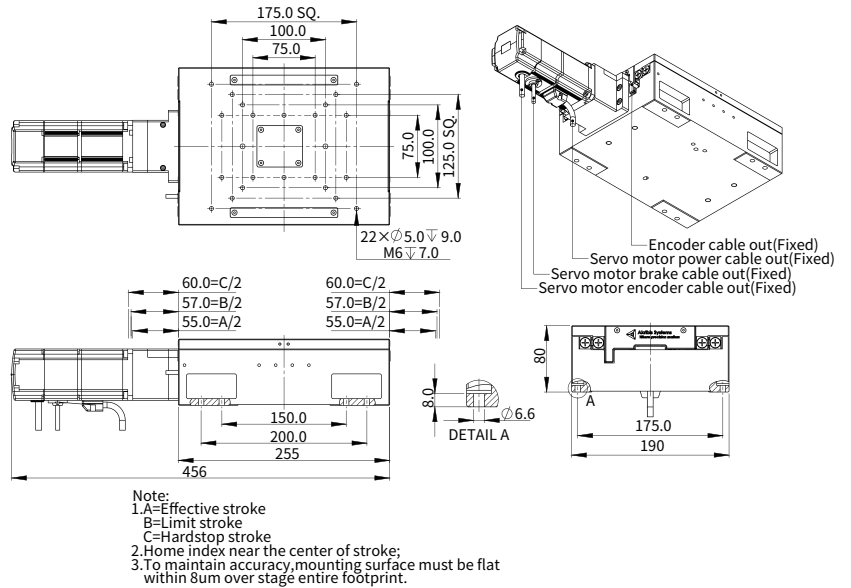


XRB190-110

Motor Specifications	Unit	Value
Motor Power	W	200
Motor Rated Torque	Nm	0.64
Motor Peak Torque	Nm	1.91
Screw Lead	mm	5
Max.imum Velocity	mm/s	250
Mechanical Specifications	Unit	Value
Precision Grade	-	N
Stroke	mm	110
Resolution	μm	0.1
Repeatability	μm	±0.5
Horizontal Straightness	μm	±2.5
Vertical Straightness	μm	±3.0
Rated Payload(Vertical)	kg	20.0
No-load Moving Mass	kg	3.0
No-load Total Mass	kg	9.7
Max. Allowable Roll Moment	Nm	20.0
Max. Allowable Pitch Moment	Nm	23.0
Max. Allowable Yaw Moment	Nm	23.0

★ All values are measured based on module fully mounted on a 8μm table.
All values are measured according to Akribis measuring standard.

■ Dimensional Drawing

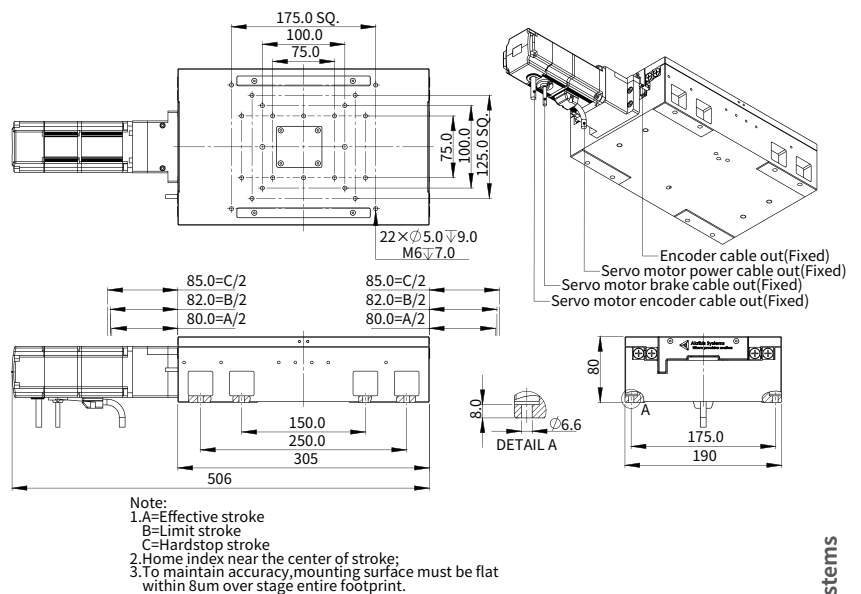


XRB190-160

Motor Specifications	Unit	Value
Motor Power	W	200
Motor Rated Torque	Nm	0.64
Motor Peak Torque	Nm	1.91
Screw Lead	mm	5
Max.imum Velocity	mm/s	250
Mechanical Specifications	Unit	Value
Precision Grade	-	N
Stroke	mm	160
Resolution	μm	0.1
Repeatability	μm	±0.5
Horizontal Straightness	μm	±2.5
Vertical Straightness	μm	±3.0
Rated Payload(Vertical)	kg	25.0
No-load Moving Mass	kg	3.5
No-load Total Mass	kg	11.1
Max. Allowable Roll Moment	Nm	26.0
Max. Allowable Pitch Moment	Nm	37.0
Max. Allowable Yaw Moment	Nm	37.0

★ All values are measured based on module fully mounted on a 8μm table.
All values are measured according to Akribis measuring standard.

■ Dimensional Drawing



Ordering Part Number (OPN)

XRB120-T03-SA01-04-R2H1-F6-

Model:

XRB120

Country of Origin:

Blank/SG

Cover Type:

T: Standard (Black Anodized)

Termination:

6: SERVO MOTOR: TYCO 4
SERVO MOTOR BRAKE: TYCO 2
SERVO MOTOR ENCODER: TYCO 15
OPTICAL ENCODER: DSUB 15

Stroke:

03: 35mm
06: 60mm
11: 110mm
16: 160mm

Cable Length:

F: 0.3m

Motor Type:

SA01: 100W Servo Motor Peak Torque: 0.96Nm

Scale Type:

1: Steel tape, 11ppm/K

Screw Lead:

04: 4mm

Encoder Type:

R2H: Quantic (0.1um)

Optional Panasonic A6 series servo motor, please contact cust-service@akribis-sys.com

Blank=Default
SG=Singapore

XRB190-T03-SB02-05-R2H1-F6-

Model:

XRB190

Country of Origin:

Blank/SG

Cover Type:

T: Standard (Black Anodized)

Termination:

6: SERVO MOTOR: TYCO 4
SERVO MOTOR BRAKE: TYCO 2
SERVO MOTOR ENCODER: TYCO 15
OPTICAL ENCODER: DSUB 15

Stroke:

03: 35mm
06: 60mm
11: 110mm
16: 160mm

Cable Length:

F: 0.3m

Motor Type:

SB02: 200W Servo Motor Peak Torque: 1.91Nm

Scale Type:

1: Steel tape, 11ppm/K

Screw Lead:

05: 5mm

Encoder Type:

R2H: Quantic (0.1um)

Optional Panasonic A6 series servo motor, please contact cust-service@akribis-sys.com

Blank=Default
SG=Singapore