

ABAR04

Basic model

Single-axis robots

Rod type



Ordering method

ABAR04							EP-01				
Model	Lead	Shape	Motor specification	Stroke	Cable length <small>Note 1</small>	Cable entry location	Robot positioner	Driver: Power capacity	Regenerative unit <small>Note 2</small>	I/O	Battery <small>Note 3</small>
	12: 12 mm 6: 6 mm	S: Straight R: Right bending L: Left bending	S: Standard/With no brake BK: Standard/With brake BL: Battery-less absolute/ With no brake BKBL: Battery-less absolute/ With brake	50 to 500 (50mm pitch)	R3: 3 m R5: 5 m R10: 10 m	R: From rear of motor F: From front of motor	EP-01	A10: 200W or less	No entry: None R: With EP-RU	EP: EtherNet/IP™ PT: PROFINET ES: EtherCAT NS: NPN CC: CC-Link	B: With battery N: None

Note 1. The robot cable is flexible and resists bending.
 Note 2. When the actuator is used vertically and the stroke is 250 mm or more, the regenerative unit is needed.
 Note 3. When the motor specification is the standard (S, BK), whether to use the battery needs to be selected.

Specifications

AC servo motor output	50 W	
Repeatability <small>Note 1</small>	+/- 0.01 mm	
Deceleration mechanism	Shifting position ball screw ϕ 10 (C7 class)	
Stroke	50 mm to 500 mm (50mm pitch)	
Maximum speed <small>Note 2</small>	720 mm/sec	360 mm/sec
Ball screw lead	12 mm	6 mm
Maximum payload	Horizontal	15 kg
	Vertical	25 kg
Max. pressing force	3 kg	5 kg
Rotating backlash	83 N	
Rotating backlash	+/- 0 °	
Maximum dimensions of cross section of main unit	W 44 mm x H 46 mm	
Overall length	Straight	ST + 326.5 mm
	Bending	ST + 245 mm
Position detector	Absolute encoder Battery-less absolute encoder	
Resolution	23 bits	
Using ambient temperature and humidity	0 to 40 °C, 35 to 80 %RH (non-condensing)	

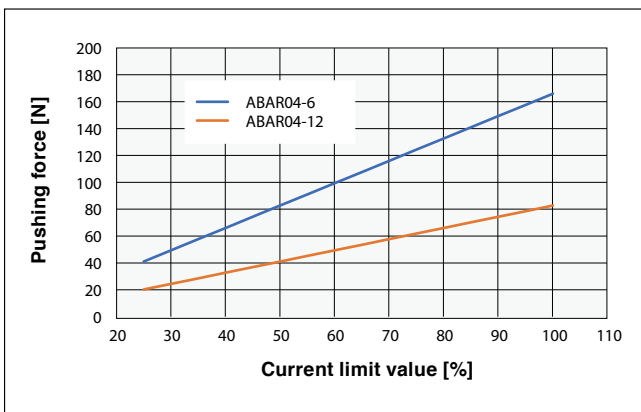
Note 1. Positioning repeatability in one direction.
 Note 2. When a moving distance is short and depending on an operation condition, it may not reach the maximum speed.
 If the effective stroke exceeds 300 mm, the ball screw may resonate. (Critical speed)
 At this time, make the adjustment to decrease the speed while referring to the maximum speed shown in the table.
 Note. See P.135 for acceleration/deceleration.

Controller

Controller	Operation method
EP-01	I/O point trace/Remote command

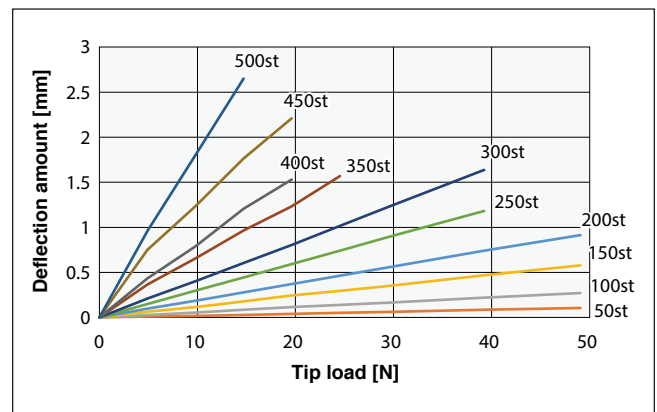
Pushing force (reference value)

For the pushing force during pushing operation, see the graph below.
 Note. The operable time (pushing judgement time) depends on the current limit value.
 Use the pushing force under the conditions that no overload error occurs.



Rod deflection amount (reference value)

For the deflection amount per stroke, see the graph below.



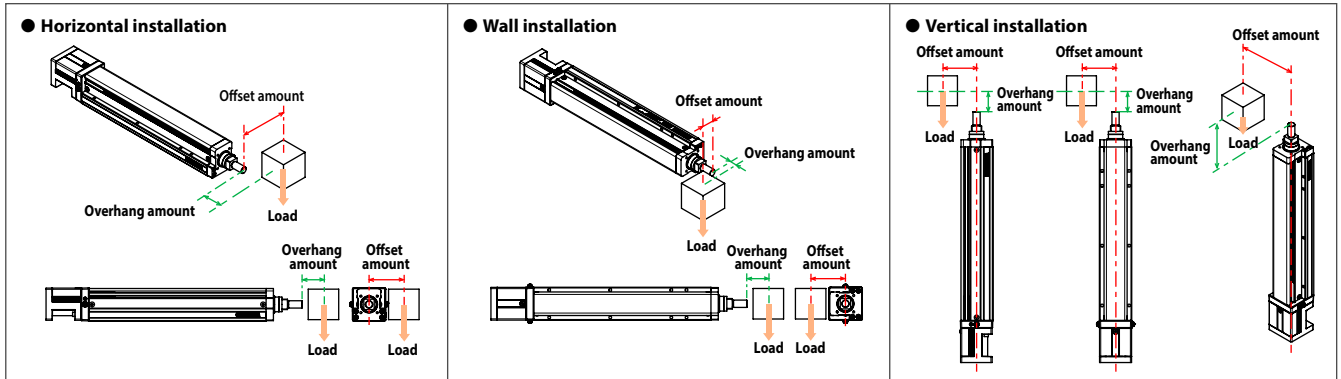
Access the website below.



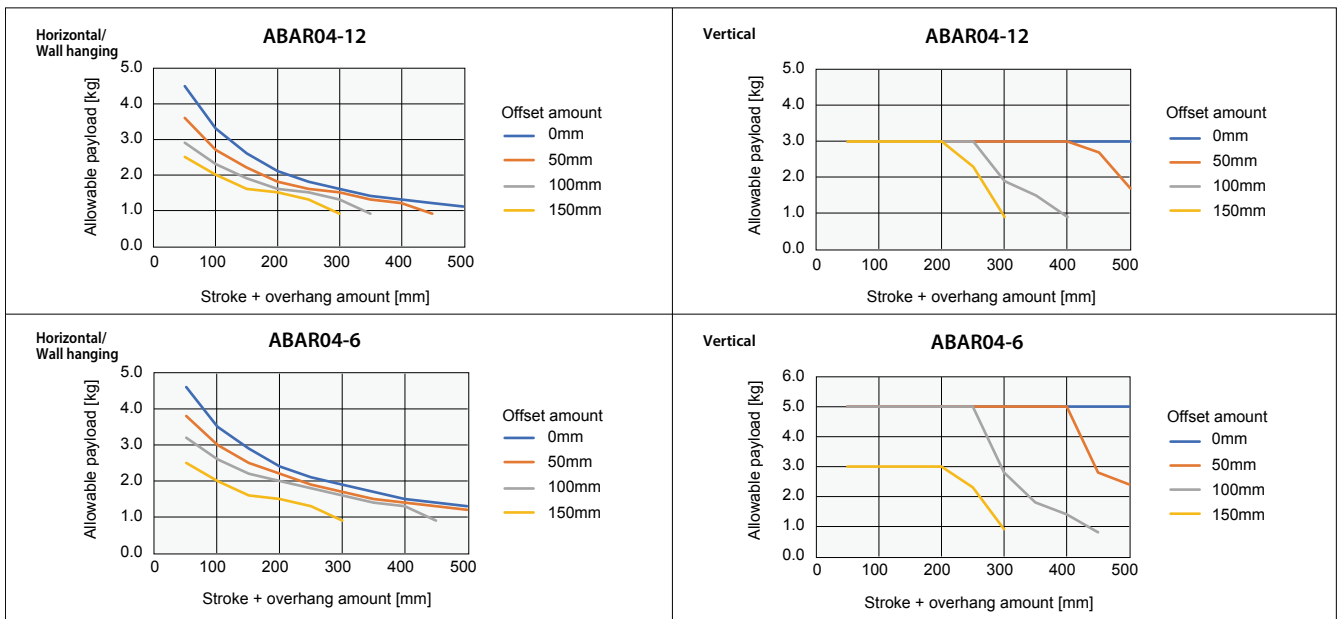
▶ The cycle time simulation can be performed easily from our member site. For details, see P.12.

■ Allowable payload

For the allowable payload per offset amount, see the graph below.

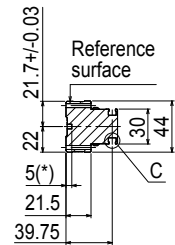
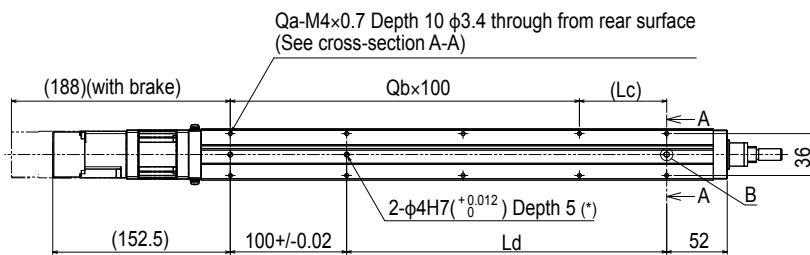
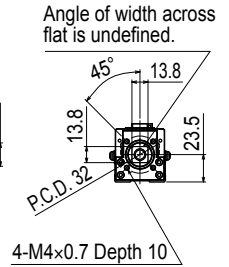
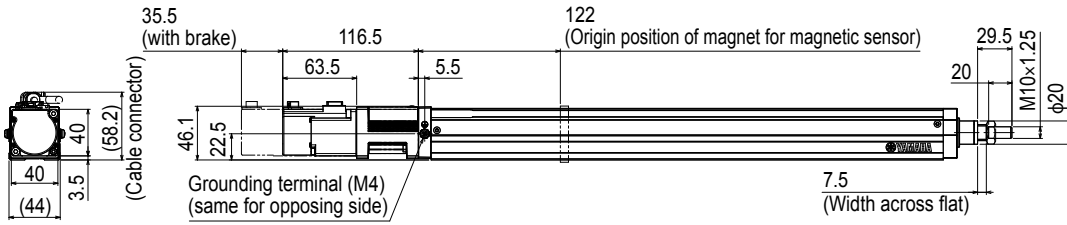
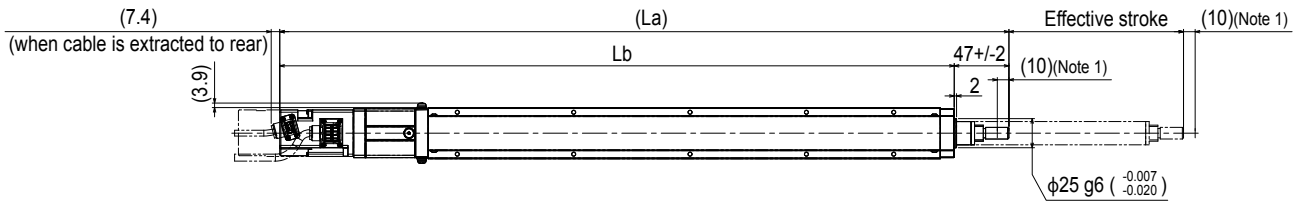


Note 1. When transferring an object with a weight exceeding the following, use an external support guide. Install the support guide flexibly so that no unnecessary load is applied to the rod.
 Note 2. The values are when the service life of the guide is 5000 km.

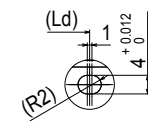
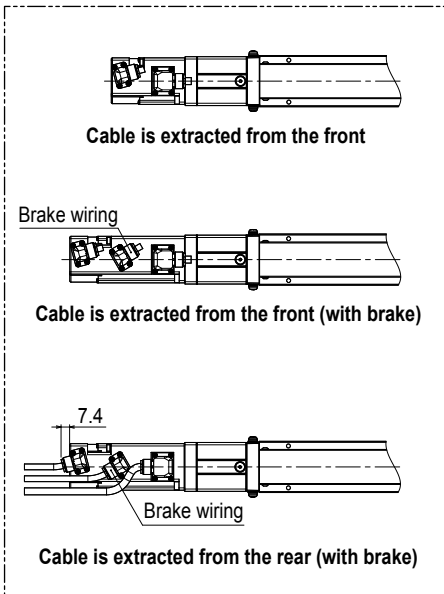


Features
 Basic model
 LBAS
 Advanced model
 LGXS
 Basic model
 LBAR
 Basic model
 ABAS
 Advanced model
 AGXS
 Basic model
 ABAR
 Acceleration/Deceleration
 Inertia Moment
 Option
 Single axis robot positioner
 EP-01

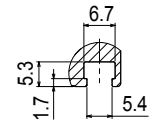
ABAR04 Straight type (S)



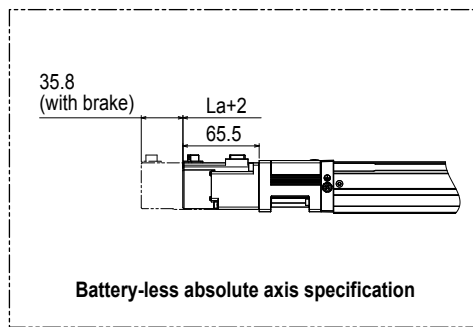
Cross-section A-A



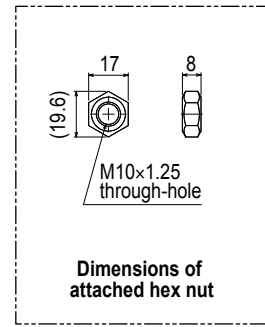
Detailed drawing B



Detailed drawing C



Battery-less absolute axis specification



Dimensions of attached hex nut

Note 1. Stop positions are determined by the mechanical stoppers at both ends.

Note 2. When changing the return-to-origin direction, the parameter needs to be changed. (The standard is that the origin is located on the motor side.)

Note 3. For the installation through hole, the length under head << 30 mm or more >> is recommended for the hex socket head bolts <M3 × 0.5>. In the installation tap hole, the length under head << thickness of stand + 10 mm or less >> is recommended for the hex socket head bolts <M4 × 0.7> used to install the main unit.

Note 4. The weight with the brake is 0.2 kg heavier than the value in the weight column.

Note 5. The minimum bending radius of the robot cable is R30 on the fixed side or R50 on the movable side. The cable extraction direction may vary depending on the specifications.

Note 6. Grease gun nozzle (recommended) (see P.143 for detail)

Part number: KFU-M3861-00

Effective stroke	50	100	150	200	250	300	350	400	450	500		
La	376.5	426.5	476.5	526.5	576.5	626.5	676.5	726.5	776.5	826.5		
Lb	329.5	379.5	429.5	479.5	529.5	579.5	629.5	679.5	729.5	779.5		
Lc	25	75	25	75	25	75	25	75	25	75		
Ld	25	75	125	175	225	275	325	375	425	475		
Qa	6	6	8	8	10	10	12	12	14	14		
Qb	1	1	2	2	3	3	4	4	5	5		
Weight (kg) Note 4	1.2	1.3	1.5	1.7	1.9	2	2.2	2.4	2.6	2.8		
Maximum speed (mm/sec)	Lead 12	720				648				504	396	324
	Lead 6	360				324				252	198	162
Speed setting	-						90%	70%	55%	45%		

