

GX10

Single-axis AC servo motor robot



Ordering method

GX10				EU					A10			
Model	Lead	Motor specification		Motor type ^{Note1}	Stroke	Cable length ^{Note2}		Cable entry location		Driver	Brake unit ^{Note3}	Absolute battery
30: 30mm 20: 20mm 10: 10mm 5: 5mm	S60: Standard / With no brake BK60: Standard / With brake BL60: Battery-less absolute / With no brake BKBL60: Battery-less absolute / With brake				100 to 1250 (50mm pitch)	R3: 3m R5: 5m R10: 10m	R: From rear of motor F: From front of motor	A10:YHX-A10-SET	V: With brake unit N: None	B: With absolute battery N: None		

Note 1. RoHS2 (EU) 2015/863 compliant motor
 Note 2. All robot cables are flexible cables. The robot cable dimensions drawing is provided on page 733.
 Note 3. The brake unit cannot be used with an external brake power input.

Specifications

Motor	60 □ / 200 W
Repeatability ^{Note 1}	+/-0.005 mm
Deceleration mechanism	Ground ball screw $\phi 15$ (Class C5)
Stroke	100 mm to 1250 mm (50mm pitch)
Maximum speed ^{Note 2}	1800 mm/sec / 1200 mm/sec / 600 mm/sec / 300 mm/sec
Ball screw lead	30 mm / 20 mm / 10 mm / 5 mm
Maximum payload	25 kg / 40 kg / 80 kg / 100 kg
Rated thrust	113 N / 170 N / 341 N / 683 N
Maximum dimensions of cross section of main unit	W 100 mm × H 99.5 mm
Overall length (Horizontal)	ST + 245 mm
Overall length (Vertical)	ST + 285.5 mm
Degree of cleanliness ^{Note 3}	ISO CLASS 3 (ISO14644-1) or equivalent
Intake air ^{Note 4}	30 N \dot{m} /min to 90 N \dot{m} /min
Controller	YHX series

Note 1. Positioning repeatability in one direction.
 Note 2. The maximum speed may not be reached if the travel distance is short or because of other operation conditions.
 If the effective stroke exceeds 700 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 3. When using in a clean environment, attach a suction air joint.
 The degree of cleanliness is the cleanliness when using at 1000 mm/sec or less.
 Note 4. The required suction amount will vary according to the operating conditions and operating environment.

Static loading moment

	(Unit: N·m)		
MY	MP	MR	
274	274	241	

Allowable overhang

Weight	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)		
	A	B	C	A	B	C	A	B	C
10kg	878	537	292	271	473	803	4135	4135	
20kg	609	256	146	118	192	481	985	985	
25kg	608	211	124	93	147	454			
15kg	1269	451	282	252	387	1159	2062	2062	
25kg	754	253	158	123	189	629	1012	1012	
40kg	466	142	88	51	78	311	750	750	
30kg	1794	298	203	162	234	1623	1926	1926	
50kg	1358	162	111	68	98	1060	931	931	
80kg	1266	86	59	16	22	552	434	434	
30kg	5605	321	225	181	258	5195	1018	1018	
50kg	3694	177	124	79	113	3111	477	477	
80kg	2619	95	67	22	31	1557	296	296	
100kg	2224	68	48	0	0	0			

Note. Distance from center of slider upper surface to carrier center-of-gravity at a guide service life of 10,000 km.
 Note. Service life is calculated for 600mm stroke models.

Robot cable

R3R (3 m/extracted to rear)	Encoder cable + Power cable set model	KEV-M4710-30
R5R (5 m/extracted to rear)	Encoder cable + Power cable set model	KEV-M4710-50
R10R (10 m/extracted to rear)	Encoder cable + Power cable set model	KEV-M4710-A0
R3F (3 m/extracted to front)	Encoder cable + Power cable set model	KEV-M4720-30
R5F (5 m/extracted to front)	Encoder cable + Power cable set model	KEV-M4720-50
R10F (10 m/extracted to front)	Encoder cable + Power cable set model	KEV-M4720-A0
10A Spec.	Model	YHX-A10-SET
	Control method	Standard profile

GX10

157.5 \pm 0.2: When origin is on motor side
 (157.5: When origin is on non-motor side)
 79.5 \pm 0.1 (Note 1)
 87.5 \pm 0.2: When origin is on non-motor side
 (87.5: When origin is on motor side)
 9.5 \pm 0.1 (Note 1)

Robot cable extraction direction (front)(Note 6)
 Robot cable extraction direction (rear)(Note 6)

198 \pm 0.2 (with brake): When origin is on motor side

40.5 (with brakes)

2-M6 \times 1.0 Depth6 (for mounting suction air joint)

Grounding terminal (M4)

60

4.5

79.2

(Cable connector)

2-M5 \times 0.8 Depth10 (2 places at same position on opposing sides)

40.5 (with brakes)

La+8

77.5

La

Lb

157.5

50

200

157.5

70

200

10

10 \pm 0.02

198

(with brakes)

2- ϕ 6H7(+0.012/0)Depth8

Effective stroke

8-M5 \times 0.8 Depth9

2- ϕ 4H7(+0.012/0)Depth6

83

Qc \times 200

Qd \times 200

Qa-M6 \times 1.0 Depth12

Refer to section C cross-section

Refer to section C cross-section (Note4)

Countersunk hole for Qb-M6

Refer to section C cross-section (Note4)

Detail of section A

Detail of section B

C cross-section

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
 Note 2. Adjustments are required when changing the return-to-origin direction. (The standard origin is on the motor side.)
 Note 3. The length under head of the hex socket head bolts <M6 x 1.0> used to mount the body with the mounting countersunk holes (section C cross-section) must be <<20mm or more>>. The recommended length under head of the hex socket head bolts <M6 x 1.0> used to mount the body with the mounting tap hole specifications is <<frame thickness + 10 mm or less>>.
 Note 4. When using the mounting countersunk holes (section C cross-section) to mount the body, remove the seal, and then fix.
 Note 5. This is the weight without brakes. When brakes are mounted, the weight will be 0.5 kg heavier than the body weight given in the table.
 Note 6. The specifications of the robot cable will vary according to the extraction direction.
 Note 7. When secured in place, the minimum bending radius of the robot cable is R30.

Effective stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	
La	345	395	445	495	545	595	645	695	745	795	845	895	945	995	1045	1095	1145	1195	1245	1295	1345	1395	1445	1495	
Lb	275.5	325.5	375.5	425.5	475.5	525.5	575.5	625.5	675.5	725.5	775.5	825.5	875.5	925.5	975.5	1025.5	1075.5	1125.5	1175.5	1225.5	1275.5	1325.5	1375.5	1425.5	
Lc	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	
Ld	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
Qa	8	10	10	10	10	12	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20
Qb	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
Qc	0	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
Qd	0	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
Weight (kg) ^{Note 5}	5.4	5.9	6.4	6.9	7.4	7.9	8.4	8.9	9.4	9.9	10.4	10.9	11.4	11.9	12.4	12.9	13.4	13.9	14.4	14.9	15.4	15.9	16.4	16.9	
Lead 30	1800																								
Lead 20	1200																								
Lead 10	600																								
Lead 5	300																								
Speed setting	-																								
Maximum speed (mm/sec)	1530	1350	1170	990	900	810	720	630	540	450	360	300	250	200	150	120	90	75	60	48	36	30	24	18	15
	85%	75%	65%	55%	50%	45%	40%	35%	30%	25%															