

GX05

Single-axis AC servo motor robot



Ordering method

GX05			EU				A10		
Model	Lead	Motor specification	Motor type ^{Note 1}	Stroke	Cable length ^{Note 2}	Cable entry location	Driver	Brake unit ^{Note 3}	Absolute battery
	20: 20mm 10: 10mm 5: 5mm	S40: Standard / With no brake BK40: Standard / With brake BL40: Battery-less absolute / With no brake BKBL40: Battery-less absolute / With brake		50 to 800 (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 732.
 Note 3. The brake unit cannot be used with an external brake power input.

Specifications

Motor	40 □ / 50 W
Repeatability ^{Note 1}	+/-0.005 mm
Deceleration mechanism	Ground ball screw φ12 (Class C5)
Stroke	50 mm to 800 mm (50mm pitch)
Maximum speed ^{Note 2}	1333 mm/sec/666 mm/sec/333 mm/sec
Ball screw lead	20 mm 10 mm 5 mm
Maximum payload	Horizontal 5 kg 8 kg 13 kg Vertical 2 kg 4 kg 8 kg
Rated thrust	41 N 69 N 138 N
Maximum dimensions of cross section of main unit	W 48 mm × H 65 mm
Overall length (Horizontal)	ST + 188 mm
Overall length (Vertical)	ST + 228.5 mm
Degree of cleanliness ^{Note 3}	ISO CLASS 3 (ISO14644-1) or equivalent
Intake air ^{Note 4}	30 Nℓ/min to 100 Nℓ/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 600 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	
24	27	23	

Allowable overhang ^{Note}

GX05-20	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)			
	A	B	C	A	B	C	A	B	C	
2kg	898	269	350	2kg	323	234	809	1kg	452	452
5kg	583	112	159	5kg	119	76	427	2kg	217	217
GX05-10	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)			
	A	B	C	A	B	C	A	B	C	
2kg	2505	382	625	2kg	585	346	2386	1kg	732	732
5kg	1366	149	246	5kg	195	113	1164	2kg	351	351
8kg	1036	90	150	8kg	95	54	745	4kg	160	160
GX05-5	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)			
	A	B	C	A	B	C	A	B	C	
3kg	4604	281	497	3kg	439	245	4371	4kg	183	183
8kg	2197	101	179	8kg	117	65	1812	6kg	111	111
13kg	1593	59	105	13kg	42	24	1000	8kg	75	75

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.

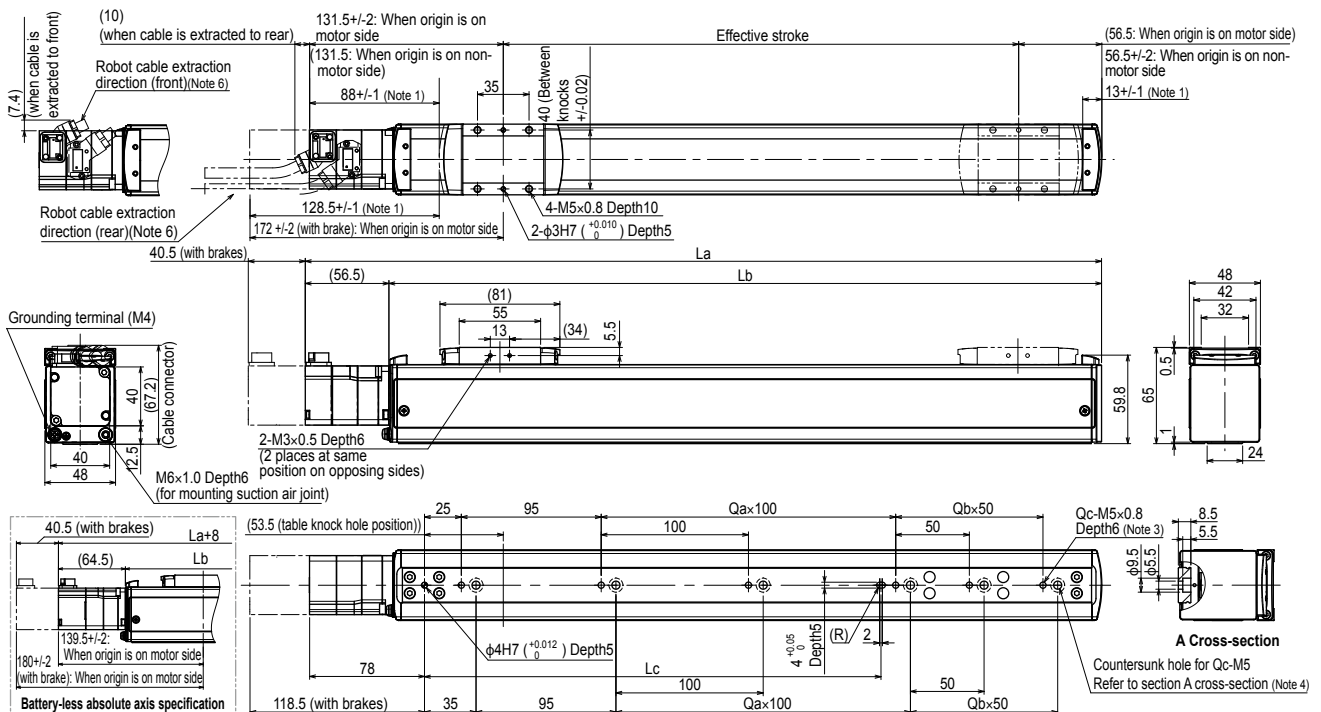
Robot cable

R3R (3 m/extracted to rear)	Encoder cable + Power cable set model	KES-M4710-30
R5R (5 m/extracted to rear)	Encoder cable + Power cable set model	KES-M4710-50
R10R (10 m/extracted to rear)	Encoder cable + Power cable set model	KES-M4710-A0
R3F (3 m/extracted to front)	Encoder cable + Power cable set model	KES-M4720-30
R5F (5 m/extracted to front)	Encoder cable + Power cable set model	KES-M4720-50
R10F (10 m/extracted to front)	Encoder cable + Power cable set model	KES-M4720-A0

Driver unit

10A Spec.	Model	YHX-A10-SET
	Control method	Standard profile

GX05



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.)

Effective stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
La	238	288	338	388	438	488	538	588	638	688	738	788	838	888	938	988
Lb	181.5	231.5	281.5	331.5	381.5	431.5	481.5	531.5	581.5	631.5	681.5	731.5	781.5	831.5	881.5	931.5
Lc	110	110	110	110	310	310	310	310	310	310	610	610	610	610	610	610
Qa	0	0	0	0	2	2	2	2	2	2	5	5	5	5	5	5
Qb	0	1	2	3	0	1	2	3	4	5	0	1	2	3	4	5
Qc	2	3	4	5	4	5	6	7	8	9	7	8	9	10	11	12
Weight (kg) ^{Note 5}	1.5	1.7	1.8	2	2.1	2.3	2.5	2.6	2.8	2.9	3.1	3.2	3.4	3.5	3.7	3.8
Maximum speed (mm/sec)	Lead 20	1333														
	Lead 10	666														
	Lead 5	333														
	Speed setting	-														
		1066 933 800 666														
		532 466 400 333														
		266 233 200 166														
		80% 70% 60% 50%														

Note 3. When using the tap holes to mount the body, remove the set screws first.
 Note 4. When using the countersunk holes (section A cross-section) to mount the body, remove the cap from the inner side and then fix. The length under head of the hex socket head bolts (M5 x 0.8) used must be 15mm or less.
 Note 5. This is the weight without brakes. When brakes are mounted, the weight will be 0.2 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.