

HarmonicDrive®
AC servo Actuator
SHA Series



Panasonic Corporation

MINAS
A5B Series

**An amplifier compatible with EtherCAT
has been added to lineup.**

HarmonicDrive® AC servo actuator SHA series CG type

now connects directly with **Panasonic Corporation's** "MINAS A5B series" (compatible with EtherCAT).

In addition to Realtime Express (RTEX), further expanding the options for network connectivity.

HarmonicDrive®



Panasonic Corporation
MINAS A5B (Compatible with EtherCAT)

■ Features

- The SHA Servo Actuator combines HarmonicDrive® gearing with a flat AC servo motor.
- Hollow Shaft design allows cables, shafts or lasers to pass through the axis of rotation. (Piping and wiring processes, etc.)
- Compact, flat configuration enables compact machine design. (All mounting directions are available.)
- Precise one-way positional accuracy: Gear Ratio 50:1=40 arc-sec (0.011 degrees) Gear Ratio 80:1 or more = 30 arc-sec (0.008 degrees)
- Torque to Volume ratio of 5-times or more than direct drive motors
- The SHA-P series is easy to use with the machine configured with the EtherCAT system

■ SG Type Specification

Model		SHA25P					SHA32P					SHA40P				
		51	81	101	121	161	51	81	101	121	161	51	81	101	121	161
Combination Amplifier	A5B Series ³	MCDHT3520B21/MCDHT3520BD1					MDDHT3530B21/MDDHT3530BD1					MDDHT5540B21/MDDHT5540BD1				
Maximum Torque ¹	Nm	127	178	204	217	229	277	395	433	459	484	523	675	738	802	841
Continuous Torque ^{1,2}	Nm	41	67	81	81	81	92	153	178	178	178	160	263	330	382	382
Maximum Speed ¹	r/min	109.8	69.1	55.4	46.3	34.8	94.1	59.3	47.5	39.7	29.8	78.4	49.4	39.6	33.1	24.8
Max. Moment Load	Nm	258					580					849				
One-way Positioning Accuracy	arc-sec	50	40	40	40	40	50	40	40	40	40	50	40	40	40	40
Encoder Type		Magnetic Type Absolute Encoder														
Output Resolution	Pulse / Revolution	6,684,672	10,616,832	13,238,272	15,859,712	21,102,592	6,684,672	10,616,832	13,238,272	15,859,712	21,102,592	6,684,672	10,616,832	13,238,272	15,859,712	21,102,592
Mass (without brake)	kg	2.95					5.9					9.9				
Mass (with brake)	kg	3.1					6.2					10.7				

Model		SHA58P				SHA65P			
		81	101	121	161	81	101	121	161
Combination Amplifier	5B Series ³	MFDHTA390B21/MFDHTA390BD1				MFDHTB3A2B21/MFDHTB3A2BD1			
Maximum Torque ¹	Nm	1924	2067	2236	2392	2743	2990	3263	3419
Continuous Torque ^{1,2}	Nm	714	905	969	969	921	1149	1236	1236
Maximum Speed ¹	r/min	37.0	29.7	24.8	18.6	34.6	27.7	23.1	17.4
Max. Moment Load	Nm	2180				2740			
One-way Positioning Accuracy	arc-sec	40	40	40	40	40	40	40	40
Encoder Type		Magnetic Type Absolute Encoder							
Output Resolution	Pulse / Revolution	10,616,832	13,238,272	15,859,712	21,102,592	10,616,832	13,238,272	15,859,712	21,102,592
Mass (without brake)	kg	29.5				37.5			
Mass (with brake)	kg	32				40			

■ CG Type Specification


Model		SHA25P					SHA32P					SHA40P				
		51	81	101	121	161	51	81	101	121	161	51	81	101	121	161
Combination Amplifier	A5B Series ³	MCDHT3520B21/MCDHT3520BD1					MDDHT3530B21/MDDHT3530BD1					MDDHT5540B21/MDDHT5540BD1				
Maximum Torque ¹	Nm	127	178	204	217	229	271	395	433	459	484	523	675	738	802	841
Continuous Torque ^{1,2}	Nm	40	66	81	81	81	90	151	178	178	178	157	260	327	382	382
Maximum Speed ¹	r/min	112	70	56	46.7	35	96	60	48	40	30	80	50	40	33.3	25
Max. Moment Load	Nm	258					580					849				
One-way Positioning Accuracy	arc-sec	50	40	40	40	40	40	30	30	30	30	40	30	30	30	30
Encoder Type		Magnetic Type Absolute Encoder														
Output Resolution	Pulse / Revolution	6,553,600	10,485,760	13,107,200	15,728,640	20,971,520	6,553,600	10,485,760	13,107,200	15,728,640	20,971,520	6,553,600	10,485,760	13,107,200	15,728,640	20,971,520
Mass (without brake)	kg	3.95					7.7					13.0				
Mass (with brake)	kg	4.1					8.0					13.8				

The values in the table above show typical values for the output shaft.

- *1: They are typical characteristics in the case of combinations with amplifiers (driven with the ideal sine wave).
- *2: Value for saturated temperature when installed on an aluminum heatsink of the following size: SHA25P: 350 x 350 x 18 [mm] SHA32P: 400 x 400 x 20 [mm] SHA40P: 500 x 500 x 25 [mm] SHA58P/65P: 650 x 650 x 30 [mm]

- *3: M*DHT****B21: Applicable to the safety standard.
M*DHT****BD1: Non-applicable to the safety standard.

* Please contact our sales department with any questions.

	Head Office:	Ichigo Omori Building 7F, 6-25-3 Minami-Oi, Shinagawa-ku, Tokyo 140-0013 JAPAN Phone: +81-3-5471-7800 / FAX: +81-3-5471-7811	Kansai Office:	Shin-Osaka Ueno Toyo Building 3F, 7-4-17 Nishi-nakajima, Yodogawa-ku, Osaka-shi, Osaka 532-0011 JAPAN Phone: +81-6-6885-5720 / FAX: +81-6-6885-5725
	Overseas Division:	1856-1 Hotakamaki, Azumino-shi, Nagano 399-8305 JAPAN Phone: +81-263-83-6935 / FAX: +81-263-83-6901	Kyushu Office:	NMF Hakata-ekimae Building 7F, 1-15-20 Hakata-ekimae, Hakata-ku, Fukuoka-shi, Fukuoka 812-0011 JAPAN Phone: +81-92-451-7208 / FAX: +81-92-481-2493
	Tokyo Office:	Ichigo Omori Building 2F, 6-25-3 Minami-Oi, Shinagawa-ku, Tokyo 140-0013 JAPAN Phone: +81-3-5471-7830 / FAX: +81-3-5471-7836	Hotaka Plant:	1856-1 Hotakamaki, Azumino-shi, Nagano 399-8305 JAPAN Phone: +81-263-83-6800 / FAX: +81-263-83-6901
	Tokyo Office, Kitakanto Team:	Ichigo Omori Building 2F, 6-25-3 Minami-Oi, Shinagawa-ku, Tokyo 140-0013 JAPAN Phone: +81-3-6410-8485 / FAX: +81-3-6410-8486	Harmonic Drive AG:	Hoenbergstrasse 14 D-65555 Limburg a.d. Lahn GERMANY Phone: +49-6431-5008-0 / FAX: +49-6431-5008-119
	Koshin Office:	1856-1 Hotakamaki, Azumino-shi, Nagano 399-8305 JAPAN Phone: +81-263-83-6910 / FAX: +81-263-83-6911	Harmonic Drive L.L.C.:	247 Lynnfield Street, Peabody, MA 01960 U.S.A. Phone: +1-978-532-1800 / FAX: +1-978-532-8406
	Chubu Office:	Nagoya Inter Building 6F, 2-173-4 Hongo, Meito-ku, Nagoya-shi, Aichi 465-0024 JAPAN Phone: +81-52-773-7451 / FAX: +81-52-773-7462	Harmonic Drive Systems (Shanghai) Co., Ltd.:	Rm206, 1st No. 641, Tianshan Rd, Changning District, Shanghai, 200336, CHINA Phone: +86-21-6237-5656 / FAX: +86-21-3250-7288

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The academic or generic term of our "HarmonicDrive" products is "strain wave gearing."