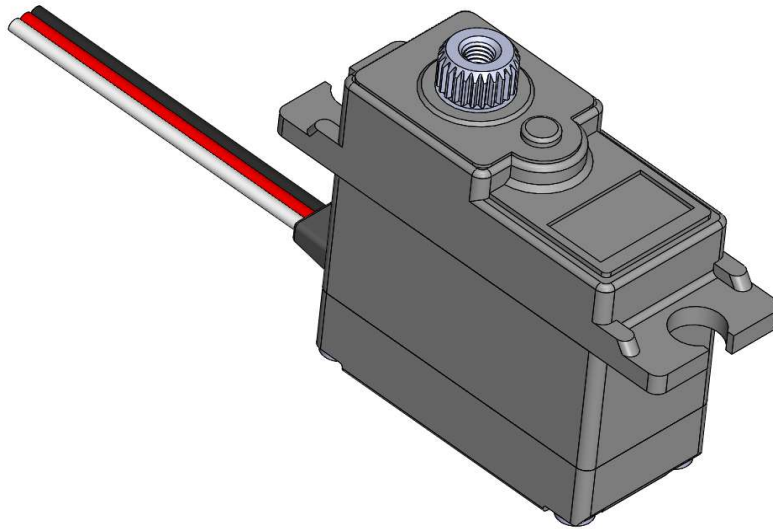


AD13-05H-A01/A21 Technical Specification

AD13-05H-A01/A21 Technical Specification



AD13-05H-A01 Supports PWM signals and S.BUS2.

AD13-05H-A21 Supports PWM signals and S.BUS2.
Includes position feedback function.

■ Caution

- This product **SHOULD NOT** be used for the devices that is directly related to human life.
- Keep the servo away from an object which produces a strong magnetic field.
There is a possibility of malfunction if the servo is affected by a strong magnetic field.
- Do not use servo horns made of metal materials (conductors).
- Do not allow the horn mounting screw to contact any metal other than the servo.

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Basic specifications (AD13-05H-A01/A21)

	Item		Specification	Remark
1	Rated Voltage		4.8V	DC power supply.
2	Operating Voltage		4.0 ~ 6.0V	DC power supply.
3	Standby Current		≤ 12mA	at 4.8V
4	Starting Current *1		≤ 1.5A	at 4.8V
5	Consumption Current *1,*2		80 mA	at 4.8V , No-Load
6	Max. Torque *1,*2		3.7 kgf·cm	at 4.8V
			0.36 N·m	
			51.4 ozf·in	
7	Rated Torque *1,*2		0.80 kgf·cm	at 4.8V
			0.078 N·m	
			11.1 ozf·in	
8	Rotation Time *1,*2		0.23 s/60°	This unit is commonly used as the speed unit for RC servos. at 4.8V
9	No Load Speed *1,*2		261 °/s	at 4.8V
			43 min ⁻¹	
10	Default Travel Angle *1,*2		CW 50° (920us) CCW 50° (2120us)	
11	Max Travel Angle		CW 75° (920us) CCW 75° (2120us)	Programing tool (CIU-2 or CIU-3,S-Link) required.
12	BackLash *1		≤ 0.6°	—
13	Temperature Range	Operating	-10~+45°C (14~113°F)	
		Storage	-20~+60°C (-4~140°F)	—

*1 At 23±5°C (Initial Performance Data)

*2 Each value is typical.

AD13-05H-A01/A21 Technical Specification

Mechanical specifications (AD13-05H-A01/A21)

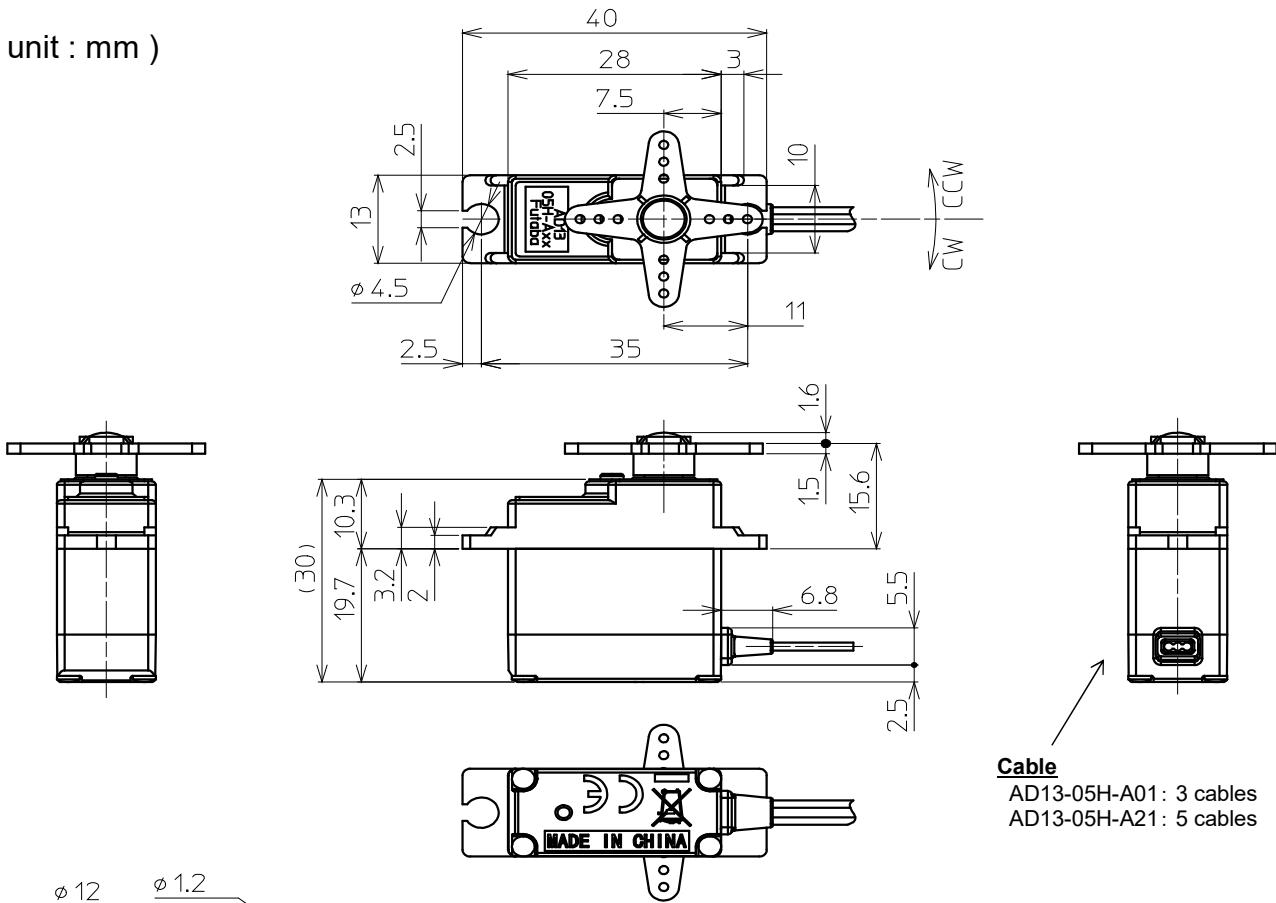
Item	Specification	Remark	
14	Outer Dimension	28.0x 13.0 x 29.7mm (1.10 x 0.51 x 1.17 in)	See below Outer Dimension
15	Weight	20g (0.74oz)	
16	International Protection Code	—	
17	Case Material	Upper:Resin / Middle:Resin / Bottom:Resin	
18	Gear Set Material	1st:Resin / 2nd...Final:Metal	
19	Gear bearing	2 ball bearing	—
20	Output Shaft	Serration S6	Size: ϕ 6mm, 25 teeth
21	Radial load	—	Do not apply a strong load to the output shaft. Load position : See below Outer Dimension
22	Position Sensor	Potentiometer	—
23	Motor Type	Brushed DC Motor	—
24	MTTF * ¹	398h(716,400cycles) (Inquire for the test report)	<p><u>Operating Condition</u></p> <ul style="list-style-type: none"> • at 4.8V • $\pm 50^\circ$, 0.5Hz sweep <p><u>Test Condition</u></p> <ul style="list-style-type: none"> • Load : Rated Torque (Powder Brake) <p><u>Angle Command Value</u></p>
25	Vibration Resistance * ¹	101h (Inquire for the test report)	<p><u>Operating Condition</u></p> <ul style="list-style-type: none"> • at 4.8V • $\pm 50^\circ$, 0.5Hz sweep • No-Load <p><u>Test Condition (sine wave)</u></p> <ul style="list-style-type: none"> • Frequency : 10 to 500Hz • sweep 1oct/min • amplitude limit 2mm • Acceleration : 300m/s² • Vibration axis : X,Y,Z

*¹ At 23 \pm 5°C (Initial Performance Data)*² Each value is typical.

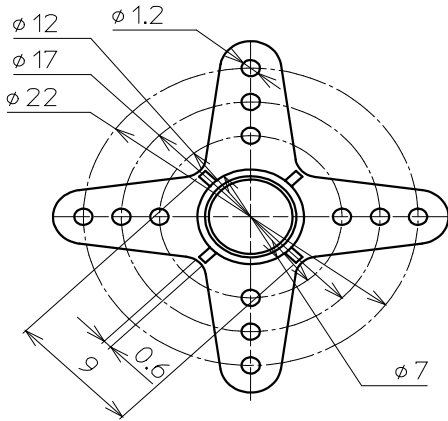
AD13-05H-A01/A21 Technical Specification

Outer Dimension (AD13-05H-A01/A21)

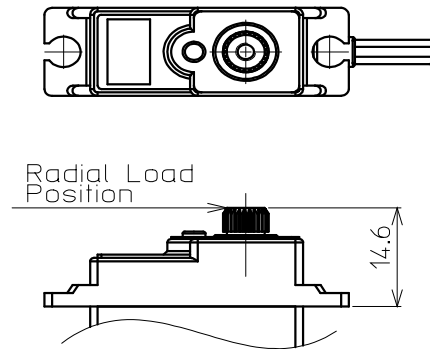
(unit : mm)



Cable
AD13-05H-A01 : 3 cables
AD13-05H-A21 : 5 cables

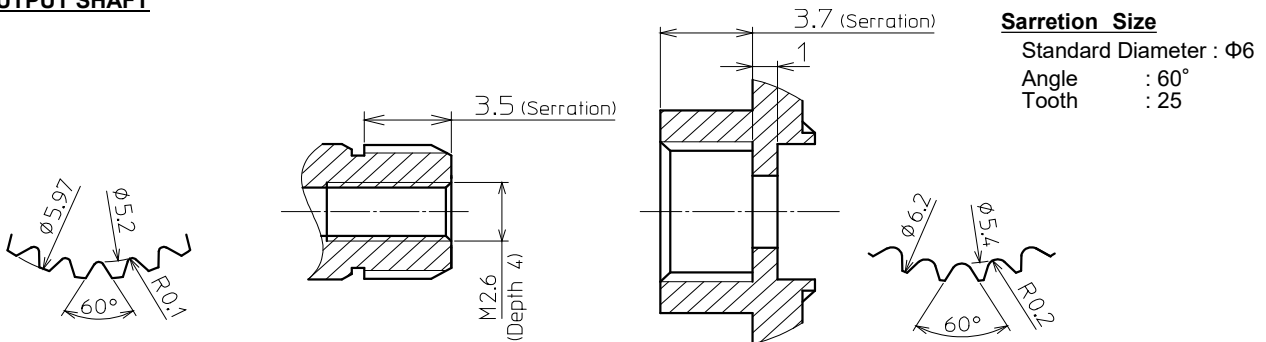


Servo Horn



Without Servo Horn

OUTPUT SHAFT



AD13-05H-A01/A21 Technical Specification

Specifications for PWM signals (AD13-05H-A01/A21)

Item		Specification			Remark	
26	Communication Interface				Signal Voltage:V	HIGH min. 2.0V max. 4.8V LOW min. 0.0V max. 0.45V
					Frame Rate:T	3.0~30ms(Default 14.25ms)
					CW / Center / CCW:Td	Default 920 / 1520 / 2120 us
					The travel-ends can be set from ±50° to ±75° on the program tool additionally provided by Futaba.	
27	Angle control + : CW - : CCW (Turn direction reversible)	Pulse	Default	Max.		
		920us	+50°	+75°		
		1520us	0°	0°		
		2120us	-50°	-75°		

Connector specifications (Only AD13-05H-A01)

Item		Specification			Remark
28	Cable	Non-Shielded Cable			Cable Length : 6.69 inch (170mm)
29	Connector	Manufacture	J.A.M. Co., Ltd.		
		Type	FC25-03HG		
		Matching	FC25-03M etc.		
30	Pin Assignment	Pin No.	Assignment	Cable Color	
		①	PWM	White	
		②	Vcc	Red	
		③	GND	Black	

Connector specifications (Only AD13-05H-A21)

Item		Specification			Remark
31	Cable	Non-Shielded Cable			Cable Length : 6.69 inch (170mm)
32	Connector	Manufacture	J.A.M. Co., Ltd.		
		Type	FC25-03HG		
		Matching	FC25-03M etc.		
33	Pin Assignment	Pin No.	Assignment	Cable Color	
		①	PWM / S.BUS2	White	
		②	Vcc	Red	
		③	GND	Black	
		④	Yellow	Pos.F/B +	
		⑤	Green	Pos.F/B -	

*1 At 23±5°C (Initial Performance Data)

*2 Each value is typical.

All Specifications are subject to change without prior notice.

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Model name system

