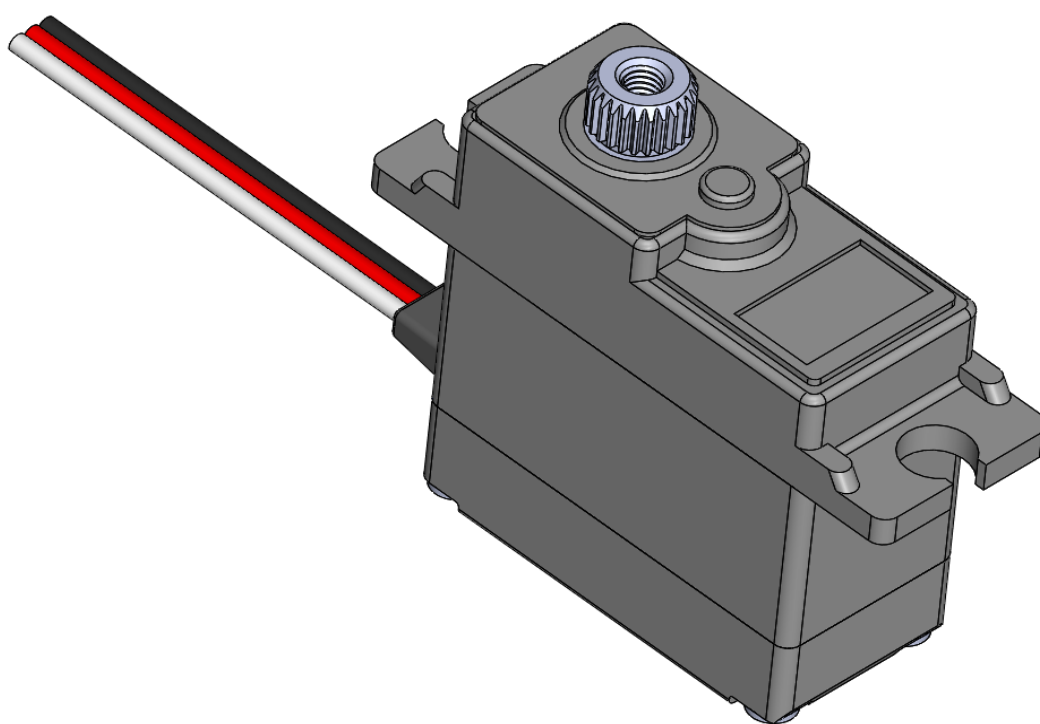


AD13-05H-A01/A21 Technical Specification



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.

AD13-05H-A01/A21 Technical Specification

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

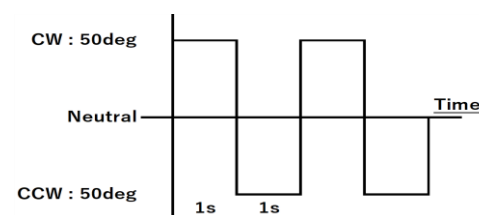
	Item		Specification		Remark
1	Rated Voltage		4.8	V	DC power supply.
2	Operating Voltage		4.0 ~ 6.0	V	DC power supply.
3	Standby Current		≤ 12	mA	at 4.8V
4	Starting Current ^{*1}		≤ 1.5	A	at 4.8V
5	Consumption Current ^{*1,*2}		80	mA	at 4.8V , No-Load
6	Max. Torque ^{*1,*2}		3.7	kgf·cm	at 4.8V
			0.36	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}		$\leq 0.6^\circ$		
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)

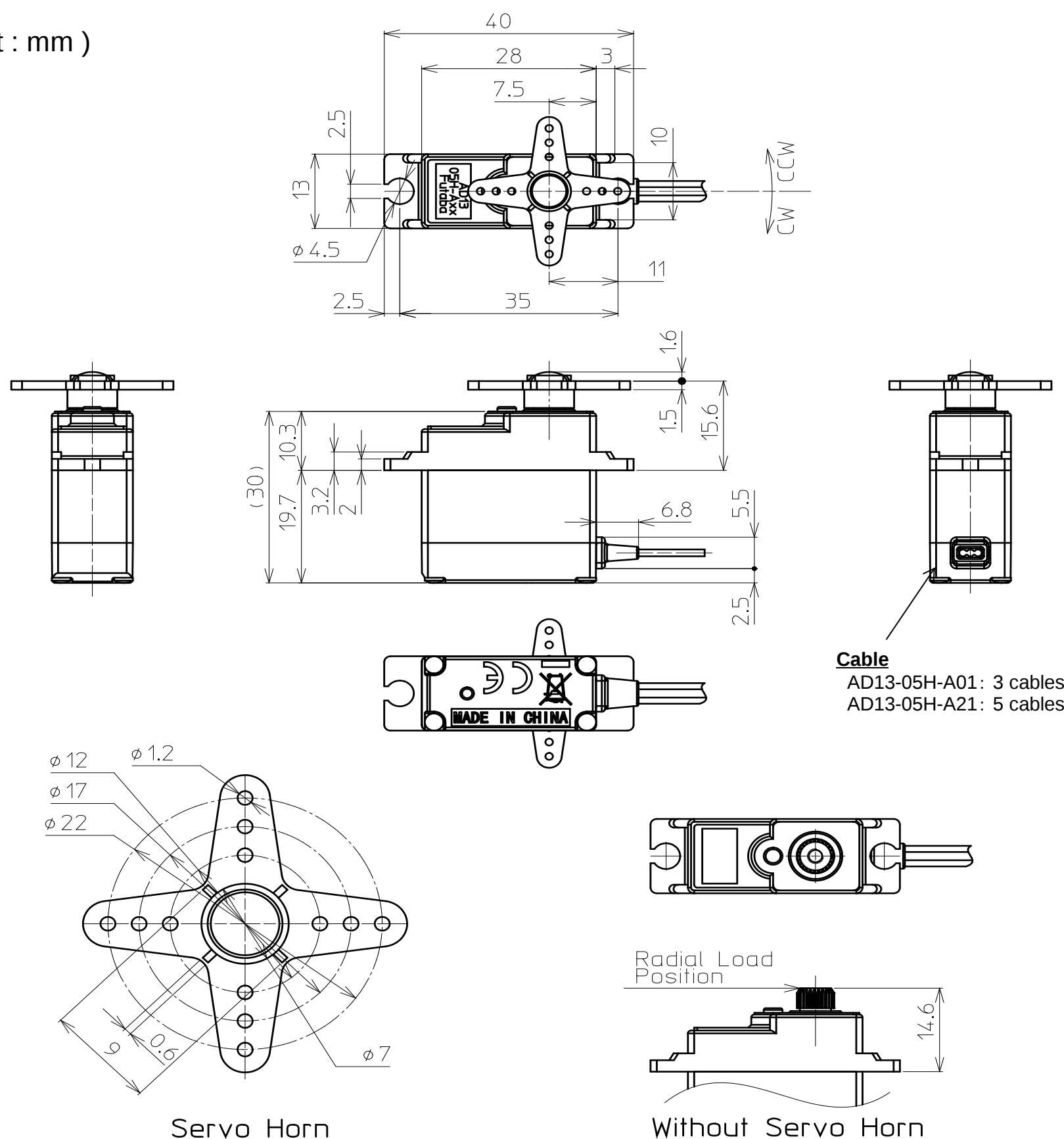
	Item	Specification	Remark
14	Outer Dimension	28.0x 13.0 x 29.7mm (1.10 x 0.51 x 1.17 inch)	See below Outer Dimension
15	Weight	20.0g (0.74oz)	
16	International Protection Code	—	
17	Case Material	Upper:Resin / Middle:Resin / Bottom:Resin	
18	Gear Set Material	1st:Resin / 2nd...Final:Metal	
19	Gear bearing	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)	<u>Operating Condition</u> - at 4.8V $\pm 50^\circ$, 0.5Hz sweep <u>Test Condition</u> - Load : Rated Torque (Powder Brake) <u>Angle Command Value</u> 
25	Vibration Resistance * ¹	101h (Inquire for the test report)	<u>Operating Condition</u> - at 4.8V $\pm 50^\circ$, 0.5Hz sweep - No-Load <u>Test Condition (sine wave)</u> - 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.

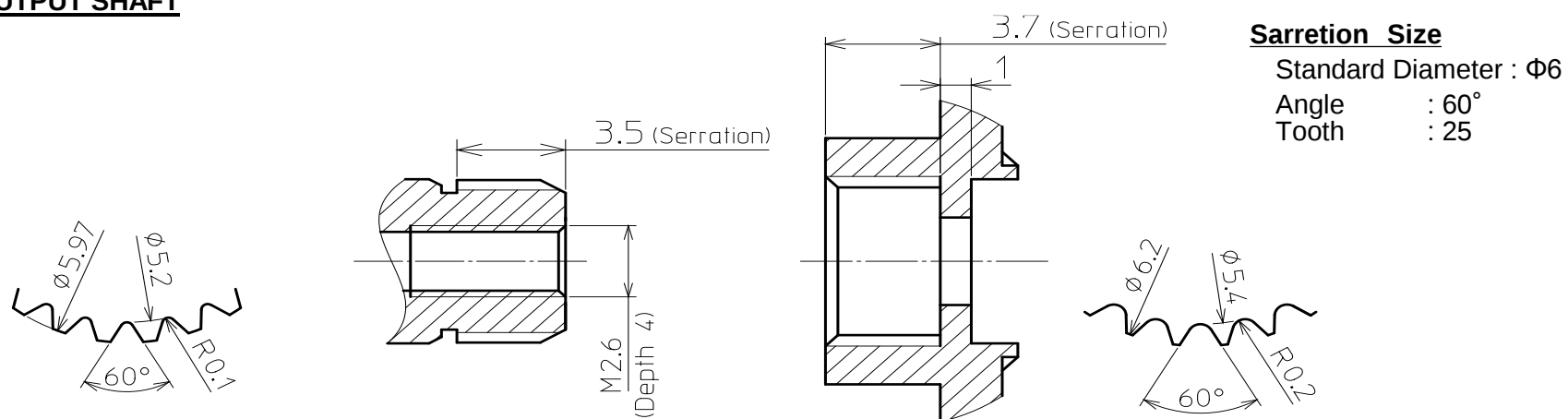
AD13-05H-A01/A21 Technical Specification

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

(unit : mm)



OUTPUT SHAFT

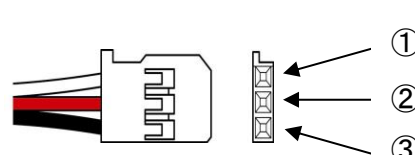


AD13-05H-A01/A21 Technical Specification

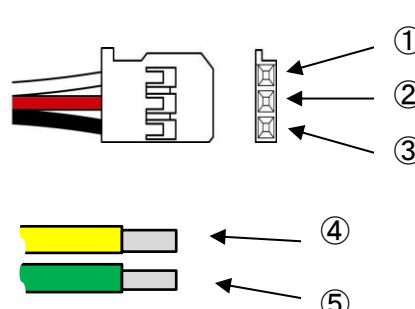
Specifications for PWM signals (AD13-05H-A01/A21)

	Item	Specification			Remark	
26	Communication Interface	PWM			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
27	Angle control + :CW - :CCW (Turn direction reversible)	Pulse	Default	Max.	The travel-ends can be set from ±50° to ±75° on the program tool additionally provided by Futaba.	
		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 : 170mm (6.69 inch)	
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 : 170mm (6.69 inch)
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 -	

All Specifications are subject to change without prior notice.

AD13-05H-A01/A21 Technical Specification

Model name system

