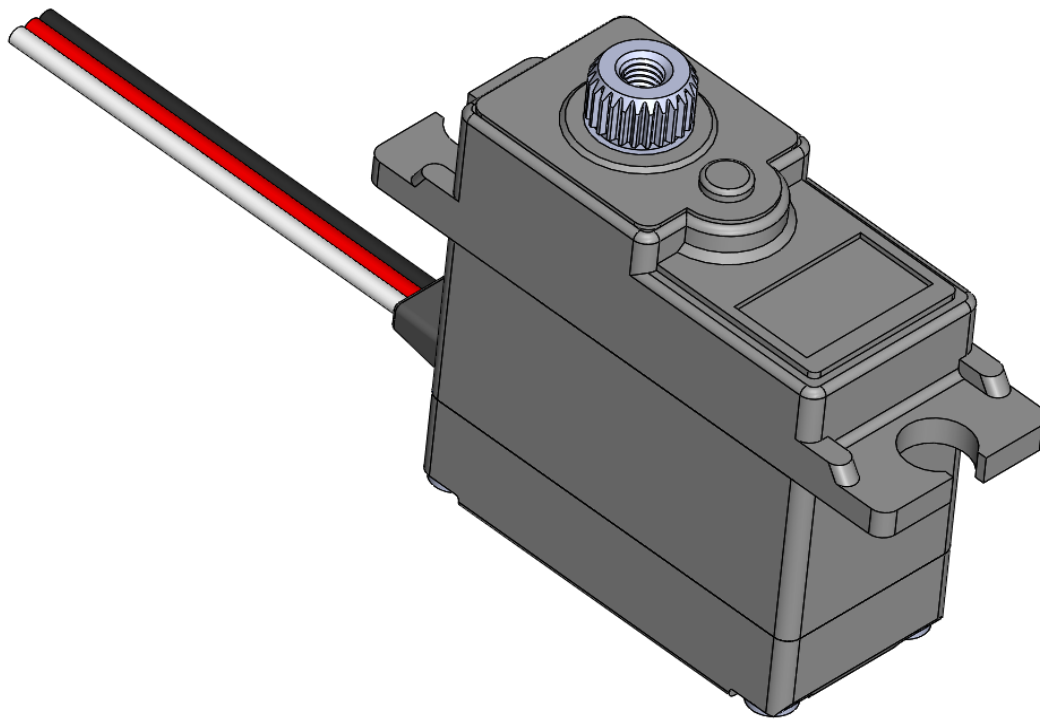


AD13-05H-A01/A21 Technical Specification



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)		Programming 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 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)	<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 <ul style="list-style-type: none"> sweep 1oct/min amplitude limit 2mm Acceleration : 300m/s² Vibration axis : X,Y,Z

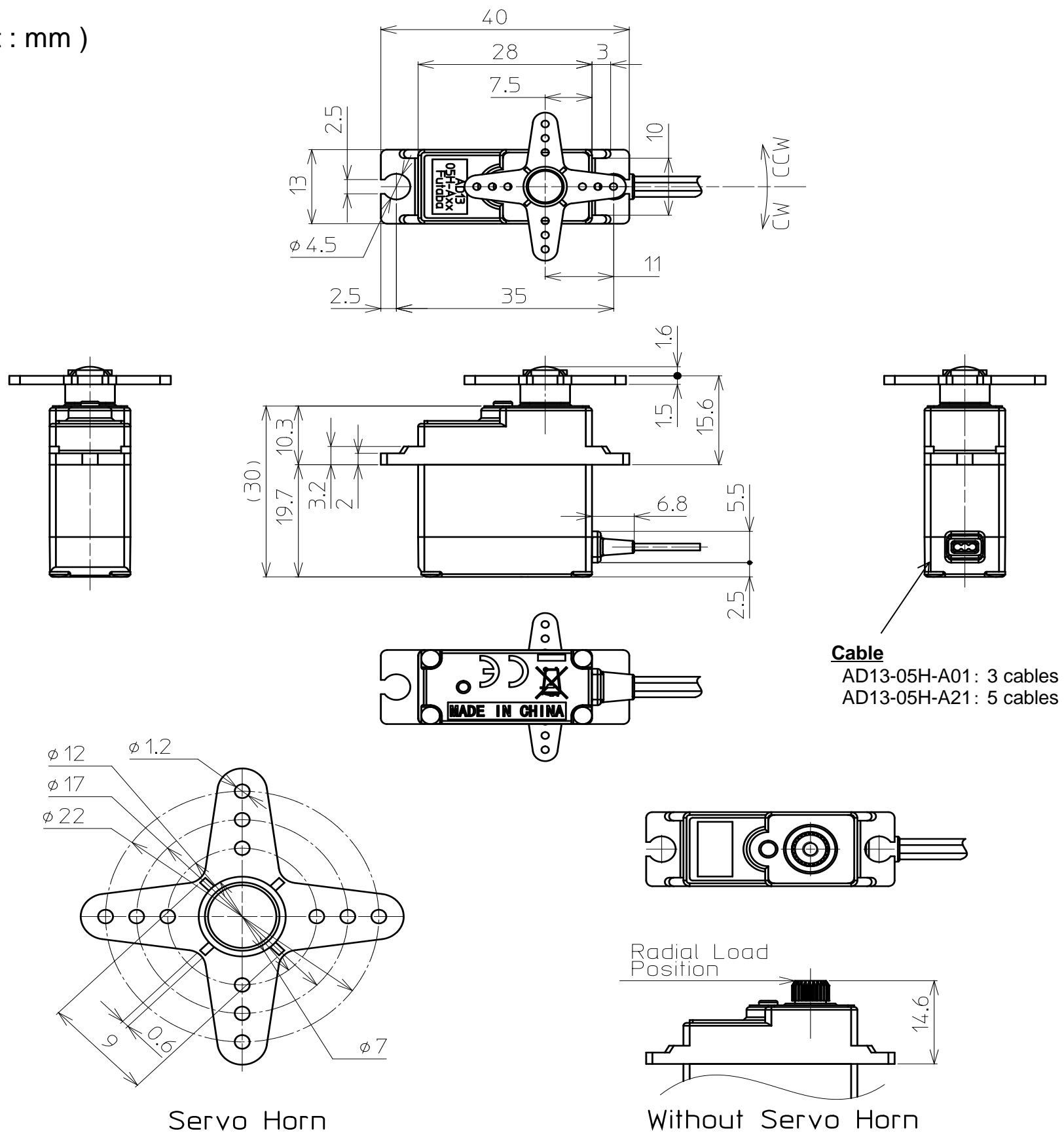
*¹ At 23 \pm 5 $^\circ$ C (Initial Performance Data)

*² Each value is typical.

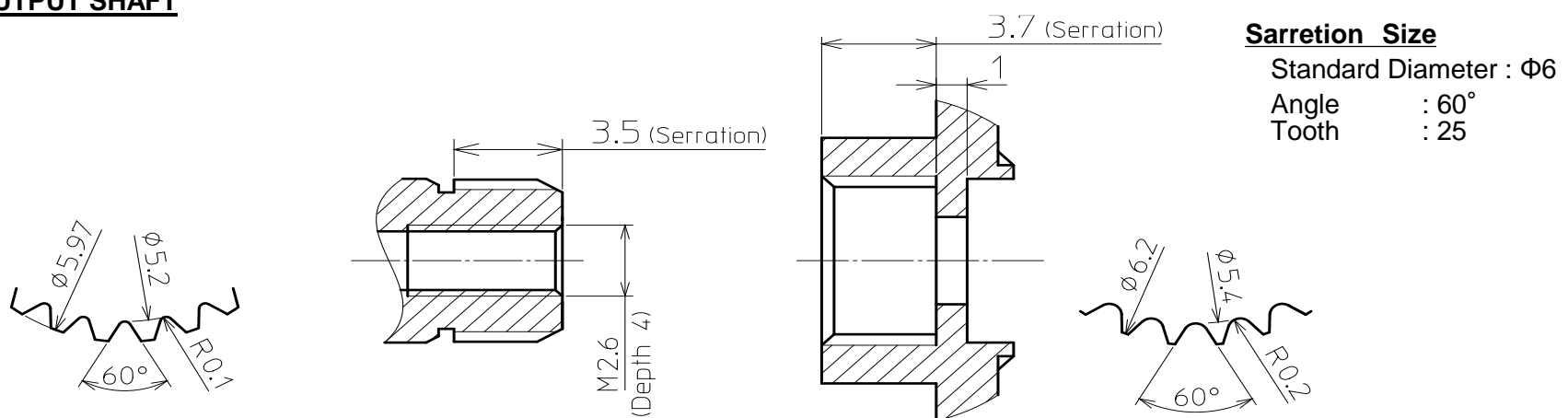
AD13-05H-A01/A21 Technical Specification

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

(unit : mm)

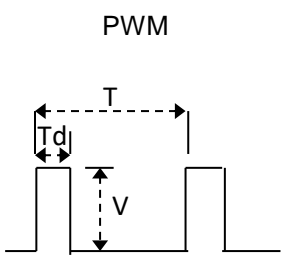


OUTPUT SHAFT

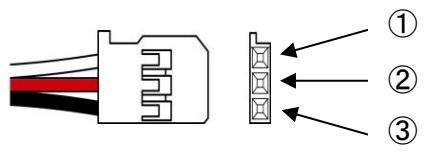


AD13-05H-A01/A21 Technical Specification

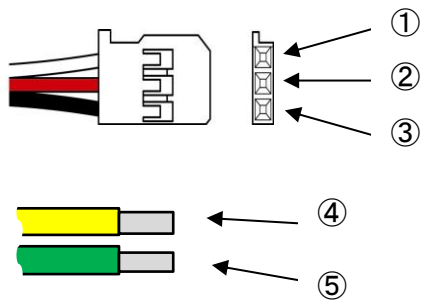
Specifications for PWM signals (AD13-05H-A01/A21)

Item	Specification	Remark		
26 Communication Interface		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

