

# BLA1HF Technical Specification

Update Number

200302-03

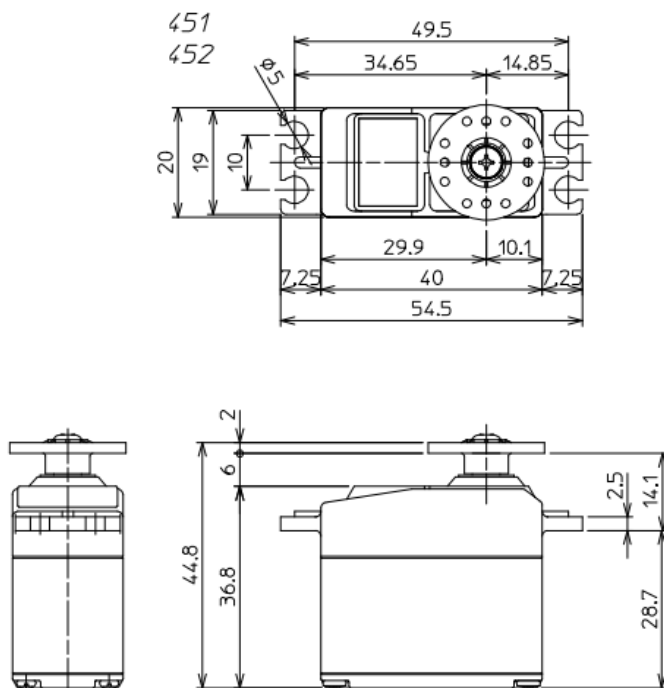
Item		Specification				Remark	
1	Communication Interface	PWM				Signal Voltage:V	HIGH : min. 2.0V max. Vcc LOW : min. 0.0V max. 0.45V
						Frame Rate:T	3.0~30ms (Default 14.25ms)
						CW/Center/CCW:Td	2120/1520/920 $\mu$ s (Resolution recommends less than 1 $\mu$ s.)
		S.BUS				Futaba Serial Protocol (Please ask us for more information.)	
2	Rated Voltage	DC 6.0~DC 7.4V				-	
3	Operating Voltage	DC 4.8~DC 8.4V				-	
4	Standby Current	$\leq 45$ mA				at 6.0~7.4V	
5	Starting Current*	3.7A				at 7.4V	
6	Consumption Current*	LL	Me	UL	unit	at 7.4V, No-Load	
		80	250	375	mA	LL : Low Limit Me : Medium Value UL : Upper Limit	
7	Max. Torque*	LL	Me	UL	unit	at 7.4V	
		16.5	21.0	25.5	kgf-cm		
		1.6	2.1	2.5	N-m		
		229.1	291.6	354.1	oz-in		
8	Rated Torque*	6.3				kgf-cm	at 7.4V
		0.62				N-m	30% of Max. Torque
		87.5				oz-in	
9	No Load Speed*	LL	Me	UL	unit	at 7.4V	
		0.09	0.12	0.15	sec/60°		
		400.0	500.0	666.7	°/sec		
		66.7	83.3	111.1	rpm		
10	Default Travel Angle	CW 60° (920 $\mu$ s) CW 60° (2120 $\mu$ s)				-	
11	Max. Travel Angle	CW 90° (920 $\mu$ s) CW 90° (2120 $\mu$ s)				-	
12	BackLash*	$\leq 0.5^\circ$				-	
13	Operating Temperature Range	-10~+45°C (14~113°F)				-	
14	Storage Temperature Range	-20~+60°C (-4~140°F)				-	
15	Outer Dimension	40.0 x 20.0 x 36.8mm (1.57 x 0.79 x 1.45 inch)				-	
16	Weight	66g (2.33oz)				-	
17	Case Material	Upper : Resin / Middle : AL / Bottom : Resin				-	
18	Gear Set Material	1st : Resin / 2nd,3rd,4th(Final) : Metal				-	
19	Cable	Non-Shielded Cable				Cable Length : 300mm (11.81 inch)	
20	Connector	Manufacture	J.A.M. Co., Ltd.				
		Type	FC25-03HG**				
		Mating	FC25-03M** etc.				
		Pin Assignment	1	White	PWM/S.BUS		
		2	Red	Vcc			
		3	Black	GND			
21	Water Resistance	IP40 equivalent				-	
22	MTTF	170h (at 7.4V)				<b>Test Condition</b> • Load : 30% of max force • Operating Condition : 0.5Hz sweep ( $\pm 60^\circ$ ) • Input Pluse : PWM 	
23	Vibration Resistance *	Operating time $\geq 50$ h (at 7.4V)				<b>Test Condition</b> Frequency range : 80 to 400Hz Sweep Rate : 1.2 min / single-sweep Acceleration : 30G (294m/s <sup>2</sup> ) Vibration axis : X, Y, Z	

\* At 23 $\pm$ 5°C (Initial Performance Data)

\*\* Custom connector. If necessary, Please use the extension cord sold from Futaba.

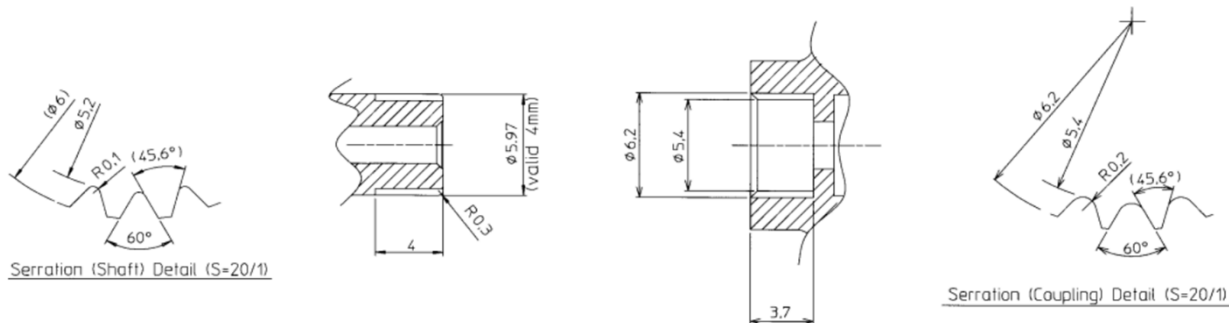
**All Specifications are subject to change without prior notice.**

Outer Dimension



(Unit mm)

Servo Serration



Trigonous Teeth Serration 5.2 x 6.2		
	Shaft	Coupling
Angle of Sarrretion	60°	60°
Number of Teeth	25	25
Shaft Addendum Circle	$\phi 6$	-----
Shaft Dedendum Circle	$\phi 5.2$	-----
Coupling Addendum Circle	-----	$\phi 5.4$
Coupling Dedendum Circle	-----	$\phi 6.2$
Over Pin Diameter	6.488 (Pin Diameter $\phi 0.5$ )	5.008 (Pin Diameter $\phi 0.4$ )

(Unit mm)