

# BLA1HH42 Technical Specification

Item		Specification				Remark		
1	Communication Interface	PWM				Signal Voltage:V	HIGH : min. 2.0V max. Vcc	
						Frame Rate:T	3.0~30ms	
						CW/Center/CCW:Td	920/1520/2120μs (Resolution recommends less than 1μs.)	
		S.BUS				Futaba Serial Protocol (Please ask us for more information.)		
2	International Protection Code	IP64				Waterproof and Dustproof		
3	Rated Voltage	11.1~14.8V DC				-		
4	Operating Voltage	9.0~16.8V DC				-		
5	Standby Current	≤ 55mA				at 11.1~14.8V		
6	Starting Current	5.5A				at 14.8V		
7	Consumption Current*	LL	Me	UL	unit	at 14.8V (at 12.0V) , No-Load		
		140(110)	275(220)	410(330)	mA	LL : Low Limit Me : Medium Value UL : Upper Limit		
8	Max. Torque*	LL	Me	UL	unit	at 14.8V (at 12.0V)		
		17.1(14.3)	24(20.0)	30.9(25.7)	kgf-cm			
		1.67(1.40)	2.35(1.96)	3.03(2.52)	N-m			
		237.4(198.6)	333.2(277.7)	429.1(356.9)	ozf-in			
9	Rated Torque*	LL	Me	UL	unit	at 14.8V		
		3.4	4.8	6.2	kgf-cm	20% of Max. Torque		
		0.34	0.47	0.61	N-m			
		47.5	66.7	85.8	ozf-in			
10	No Load Speed*	LL	Me	UL	unit	at 14.8V (at 12.0V)		
		0.03(0.045)	0.05(0.065)	0.07(0.085)	sec/60°			
		857.1(705.9)	1200(923.1)	2000(1333.3)	°/sec			
		142.8(117.6)	200(153.8)	333.3(222.2)	rpm			
11	Default Travel Angle	CW 60° (920μs) CCW 60° (2120μs)				-		
12	Max Travel Angle	CW 90° (920μs) CCW 90° (2120μs)				Programing tool (CIU-2 or CIU-3,S-Link) required.		
13	BackLash*	≤ 0.5°				-		
14	Operating Temperature Range	-30~+70°C (-22~158°F)				-		
15	Storage Temperature Range	-40~+80°C (-40~176°F)				-		
16	Outer Dimension	1.59 x 0.83 x 1.51 inch (40.5 x 21.0 x 38.4mm)				-		
17	Weight	3.53oz (100g)				With Horn and screw		
18	Case Material	Upper : AL / Middle : AL / Bottom : AL				-		
19	Gear Set Material	1st,2nd,3rd,4th(Final) : Metal				-		
20	Position Sensor	Potentiometer (Contact Type)				-		
21	Motor Type	Brushless DC Motor				-		
22	Cable	Shielded Cable				Cable Length : 15.75 inch (400mm)		
23	Connector	Manufacture	Tyco Electronics					
		Type	TE794617-6					
		Mating	TE794616-6 etc.					
		Pin Assignment	1	White	S.BUS / PWM			
			2	Red	Vcc			
			3	Black	GND			
4	Yellow		Position Feedback+					
5	Green	Position Feedback-						
6	Shield	Case Shield Line						
24	MTTF	1000h				Test Condition at 14.8V / Load : 20% of Max. Torque / 0.5Hz sweep (±60°)		
25	Vibration Resistance *	Operating time ≥ 100 cycle (at 14.8V)				Test Condition		
						Frequency range	10 to 500Hz	
						Acceleration	10G (100m/s <sup>2</sup> )	
						Sweep rate	1 oct / min	
						Vibration axis	X, Y, Z	

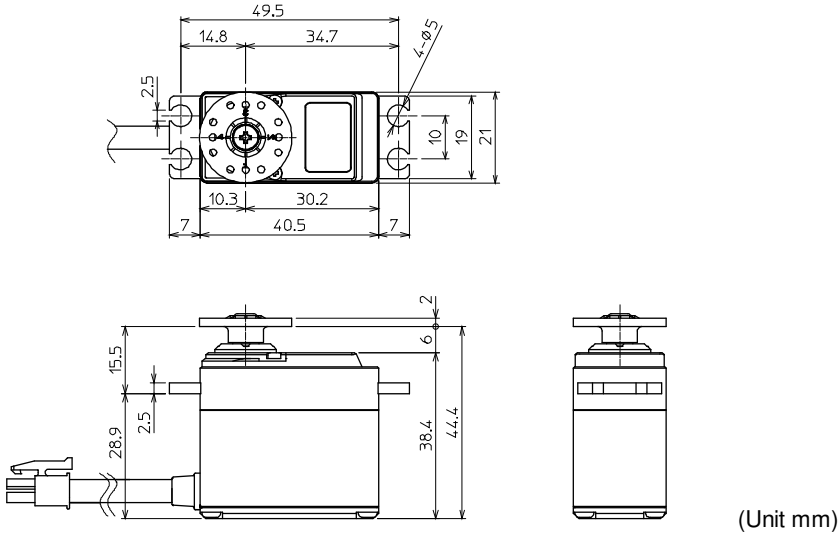
\* Initial Performance Data at 23±5°C

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

**Caution**

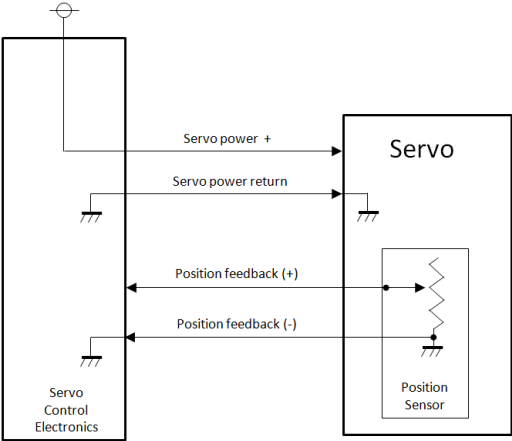
**This product SHOULD NOT be used for the devices that is directly related to human life.**

**Outer Dimension**



(Unit mm)

**Position Feedback**



The position feedback voltage is expressed by the following formula.

$$\text{The position feedback voltage [V]} = 1.53 - \text{Actual angle [}^\circ\text{]} \times 0.012$$

Please use this formula as a reference. In actual use, it is recommended to actually measured the relationship between angle and voltage.

**BLA1HH42 PositionFeedback voltage level**

