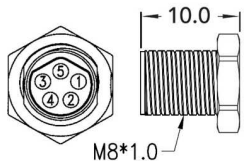
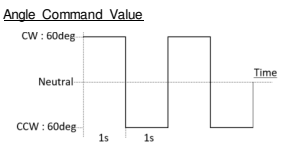
BLA21-06U-A01 Technical Specification

Futaba

Update Number
201222-01

	Item		Specification				Remark	
1	CommunicationInterface		CAN BUS				Protocol	UAVCAN V0
							Baud Rate	1Mbps
							Sample Point	87.5%
							Node ID	1～127
							(Please ask us for more information)	
2	International Protection Code		IP67				Waterproof and dustproof	
3	Rated Voltage		6.0 ～ 7.4V				DC power supply.	
4	Operating Voltage		5.0 ～ 8.4V				DC power supply.	
5	Standby Current		≤ 70mA				at 7.4V	
6	Starting Current *	Design value	≤ 20A				at 7.4V	
		Protection	12A				100% of torque control. See No.7.	
7	Operating mode	Angle control	+36,000,000.0° ～ -36,000,000.0°				See No.13.	
		Speed control	-300rpm ～ +300rpm				Commandable speed. See No.12 for actual speed.	
		Torque control	-100% ～ +100%				Max. torque at supply voltage of 7.4V is 100%. See No.9. The actual torque that can be output depends on the power supply, load, etc., so use the command value as a guide.	
8	Consumption Current *		LL	Me	UL	unit	at 7.4V , No-Load	
			170	270	370	mA	LL : Low Limit Me : Medium Value UL : Upper Limit	
9	Max. Torque *		LL	Me	UL	unit	at 7.4V	
			38.0	48.0	58.0	kgf·cm		
			3.73	4.71	5.69	N·m		
			528	667	805	ozf·in		
			42.0			kgf·cm	at 6.0V Medium Value	
			50.0			kgf·cm	at 8.4V Reference value	
10	Rated Torque *		12.0			kgf·cm	at 7.4V	
			1.18			N·m		
			167			ozf·in		
			9.7			kgf·cm	at 6.0V Medium Value	
			12.0			kgf·cm	at 8.4V Reference value	
11	No Load Speed * (Angle control mode)		LL	Me	UL	unit	at 7.4V	
			0.04	0.07	0.10	s/60°		
			600	857	1500	°/s		
			100	143	250	rpm		
			0.08			s/60°	at 6.0V Medium Value	
			0.06			s/60°	at 8.4V Reference value	
12	No Load Speed * (Speed control mode)		LL	Me	UL	unit	at 7.4V	
			100	143	250	rpm		
13	Travel Angle *	Range	Mechanical	+179.9° ～ -180.0°			Absolute	
			Software	+36,000,000.0° ～ -36,000,000.0°			Pseudo absolute *Incremental above mechanical range.	
		Error	LL	Me	UL	unit	at 7.4V, No-Load, Position:±60°	
			---	±1.5	±3.0	°		
		Repeatability	---	±0.5	±3.0	°	at 7.4V, No-Load, Position:0°→+60°→0°、0°→-60°→0°	
14	BackLash *		≤ 0.5°				—	
15	Temperature Range	Operating	-40～+80℃ (-40～176°F)				*The operating noise of servo may become loud in low temperature.	
		Storage	-40～+80℃ (-40～176°F)				—	
		Protection	+80℃ (176°F)				Torque OFF at set temperature or higher.	
16	Outer Dimension		48.0x 21.0 x 51.5mm (1.89 x 0.83 x 2.03 in)				Refer to Outer Dimension	
17	Weight		130g				with Horn and screws without cables	
18	Case Material		Aluminum				Surface : Anodizing Salt Water Resistance, EMI Case Shielding	
19	Gear Set Material		Steel				Surface : Hardening treatment	
20	Gear bearing		8 ball bearing				—	
21	Radial load		100N				Load position : Refer to Outer Dimension * Design reference value.	
22	Position Sensor		Magnetic Encoder				—	
23	Motor Type		Brushless DC Motor				—	
24	Cable		Shielded Cable (Detachable)				Cable Length : 15.75 inch (400mm)	
25	Connector		Manufacture	ODS Electronics Co., Ltd.				
			Type	MMEPM05MCC-SHS7001				
			Mating	MAEAF05FCC-SRC7000 etc.				
			Pin Assignment	1	Brown	Battery(+)		
				2	White	Battery(-)		
				3	Blue	CAN-H		
				4	Black	CAN-L		
				5	Drain	Case Shield Line		
26	MTTF *		Operating time > 1,000h (continue testing) (Please contact us for a test report)				Operating Condition ・ at 7.4V ・ ±60°, 0.5Hz sweep Test Condition ・ Load : Rated Torque (Powder Brake)	
27	Vibration Resistance *		Operating time ≥ 1,000h (Please contact us for a test report)				Operating Condition ・ at 7.4V ・ ±60°, 0.5Hz sweep ・ No-Load	Test Condition (sine wave) ・ Frequency : 10 to 500Hz (sweep 1oct/min, amplitude limit 2mm) ・ Acceleration : 300m/s^2 ・ Vibration axis : X,Y,Z

* At 23±5℃ (Initial Performance Data)

All Specifications are subject to change without prior notice.

Outer Dimension (unit:mm)

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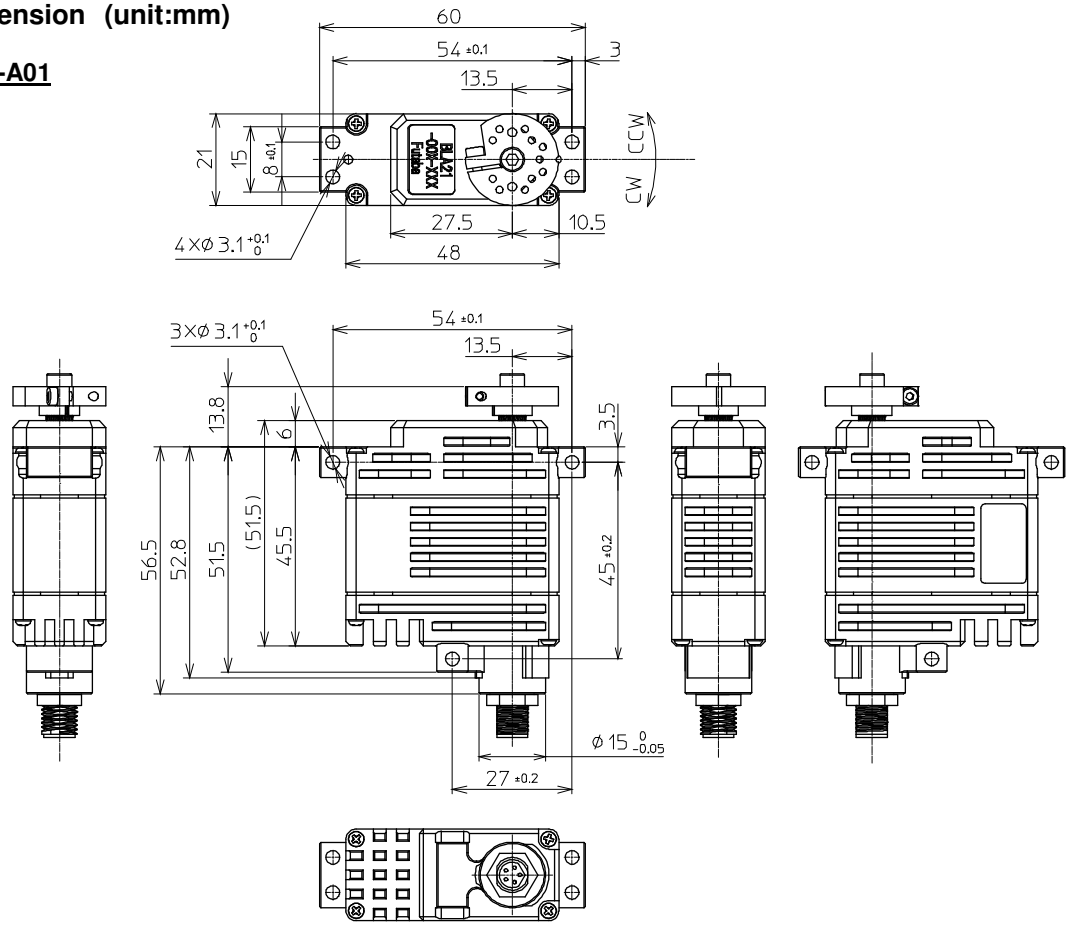
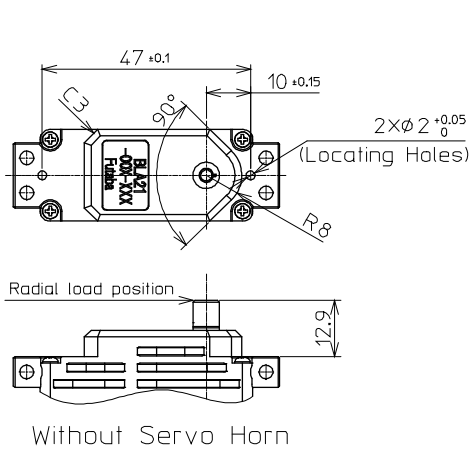
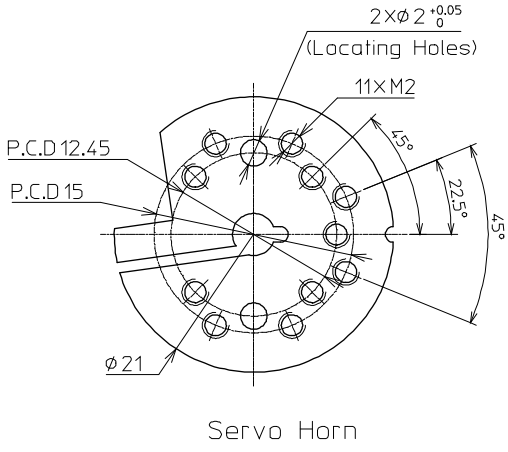
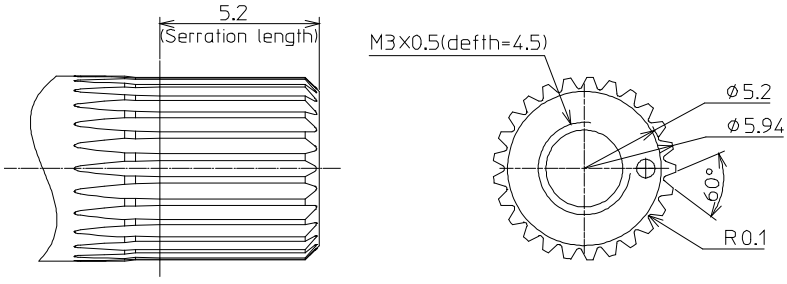






OUTPUT SHAFT



Sarretion Size

Standard Diameter : Φ6
Angle : 60˚
Tooth : 25

■Caution

- This product SHOULD NOT been 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.