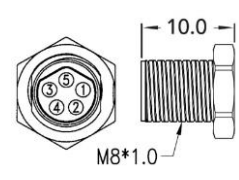
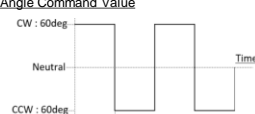


BLA21-12U-A01 Technical Specification

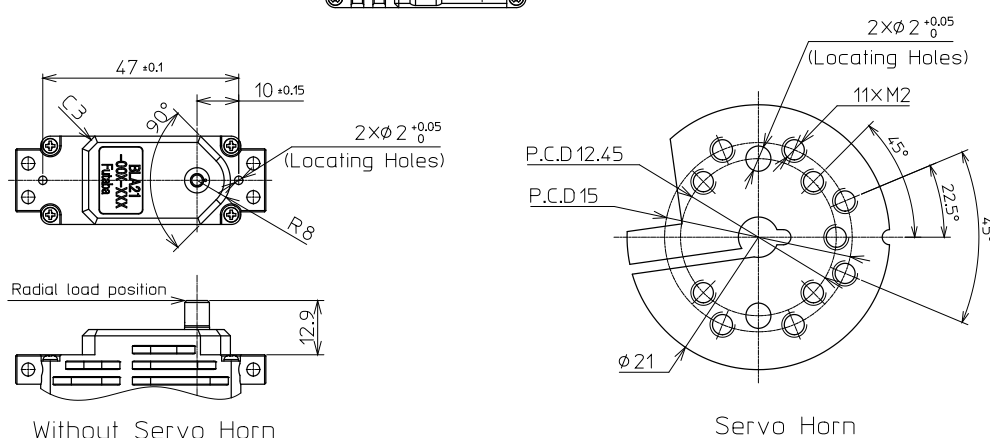
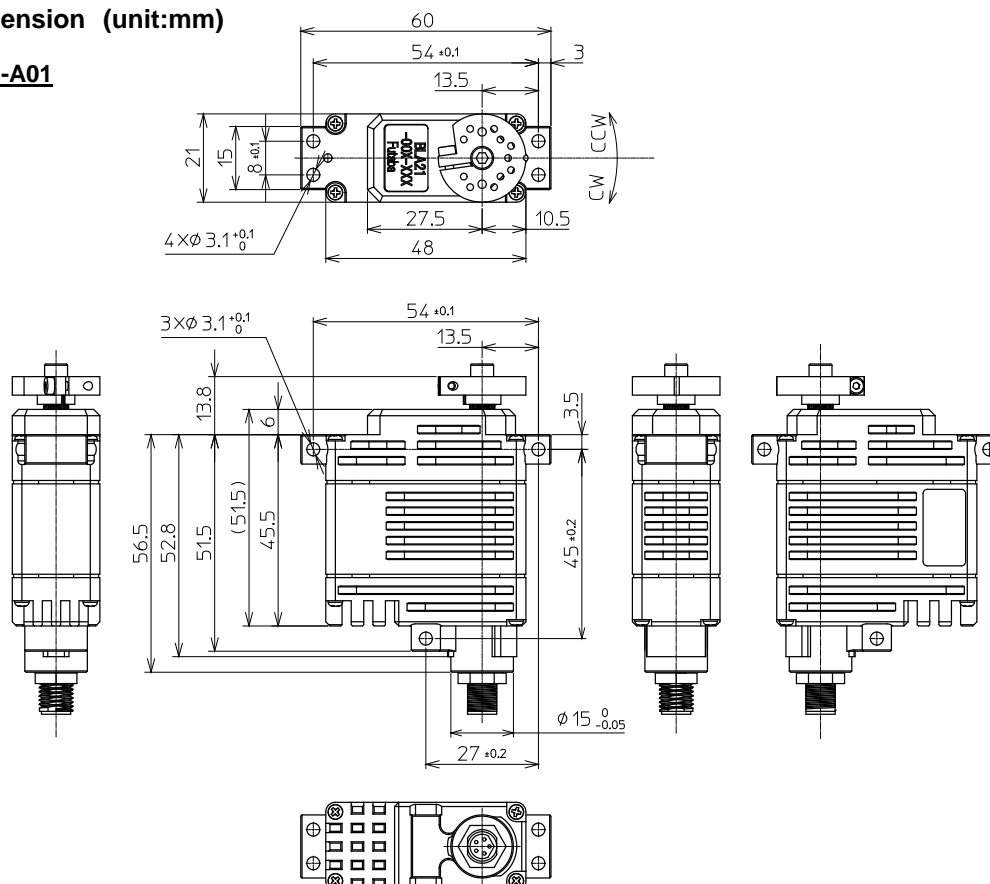
Item		Specification				Remark	
1	CommunicationInterface	CAN BUS				Protocol	UAVCAN V0
						Baud Rate	1Mbps
						Sample Point	87.5%
						Node ID	1~127
(Please ask us for more information)							
2	International Protection Code	IP67				Waterproof and dustproof	
3	Rated Voltage	11.1 ~ 14.8V				DC power supply.	
4	Operating Voltage	9.0 ~ 16.8V				DC power supply.	
5	Standby Current	≤ 55mA				at 12.0V	
6	Starting Current *	Design value	≤ 10A			at 12.0V	
		Protection	7A			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 12.0V 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 12.0V , No-Load LL : Low Limit Me : Medium Value UL : Upper Limit	
		34	120	206	mA		
9	Max. Torque *	LL	Me	UL	unit	at 12.0V	
		38.0	50.0	62.0	kgf·cm		
		3.73	4.90	6.08	N·m		
		528	694	861	ozf·in		
		48.0			kgf·cm		at 11.1V Medium Value
10	Rated Torque *	52.0			kgf·cm	at 14.8V Reference value	
		15.0			kgf·cm	at 12.0V	
		1.47			N·m		
		208			ozf·in		
		13.9			kgf·cm	at 11.1V Medium Value	
11	No Load Speed * (Angle control mode)	LL	Me	UL	unit	at 12.0V	
		0.06	0.09	0.12	s/60°		
		500	667	1000	°/s		
		83	111	167	rpm		
		0.10			s/60°		at 11.1V Medium Value
12	No Load Speed * (Speed control mode)	0.07			s/60°	at 14.8V Reference value	
		LL	Me	UL	unit	at 12.0V	
		83	111	167	rpm		
		Mechanical	+179.9° ~ -180.0°				Absolute
		Software	+36,000,000.0° ~ -36,000,000.0°				Pseudo absolute *Incremental above mechanical range.
13	Travel Angle *	Range					Standard value at 12.0V, No-Load, Position: ±60°
		Accuracy	±3.0			°	
			±1.5			°	
14	BackLash *	≤ 0.5°				-	
15	Temperature Range	Operating	-40~+70°C (-40~158°F)			*The operating noise of servo may become loud in low temperature.	
		Storage	-40~+80°C (-40~176°F)				
		Protection	+80°C (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 (TBC)				<u>Operating Condition</u> • at 12.0V • ±60°, 0.5Hz sweep <u>Test Condition</u> • Load : Rated Torque (Powder Brake)	
						<u>Angle Command Value</u> 	
27	Vibration Resistance *	Operating time ≥ 500h (TBC)				<u>Operating Condition</u> • at 12.0V • ±60°, 0.5Hz sweep • No-Load <u>Test Condition (sine wave)</u> • Frequency : 10 to 500Hz (sweep 1oct/min, amplitude limit 2mm) • Acceleration : 300m/s ² • Vibration axis : X,Y,Z	

* At 23±5°C (Initial Performance Data)

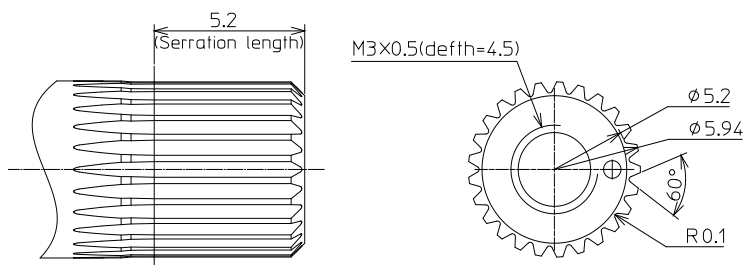
All Specifications are subject to change without prior notice.

Outer Dimension (unit:mm)

BLA21-12U-A01



OUTPUT SHAFT



Sarretion Size

Standard Diameter : Φ6

Angle : 60°

Tooth : 25

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.