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SG20BL

Engineered and Manufactured in South Korea

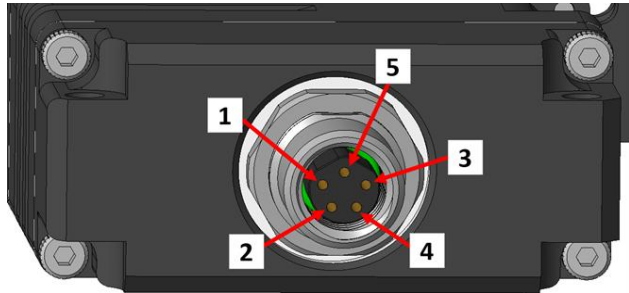
1 Performance Specification

Model	SG20BL-CAN-12V	SG20BL-CAN-24V
Control System	CAN 2.0A,B / DroneCAN (UAVCAN v0)	
Position Type	Contactless Magnetic Encoder	
Motor Type	BLDC Motor	
Operating Voltage Range	9.0V ~ 15.0V	18.0V ~ 32.0V
Voltage	At 12.0V	At 24.0V
No Load Speed	463.0 °/sec	
	0.13 sec/60°	
	77.17 RPM	
Rated Torque (At 20% Load)	1.27 N·m (13.0 kgf·cm)	
Peak Torque	6.37 N·m (65.0 kgf·cm)	
Idle Current (At Stopped)	30mA	30mA
Running Current (At No Load)	500mA	500mA
Peak Current	4,000mA	2,000mA
Operating Travel	Servo Mode : ±60°(Default), ±150°(Programmable)	
Multi-Turn	Turn Mode : ±32760 turns (DroneCAN: n/a)	
Continuous Mode	N/A	
Temperature Sensing	Enabled (MCU, Motor)	
Voltage Sensing	Enabled	
Current Sensing	Enabled	
Humidity Sensing	Enabled	
Servo Amplifier Type	32bit Programmable Digital	

2 Mechanical Features

Connector Type	Circular
Dimensions	45.0 x 20.0 x 75.0mm (±0.2mm) / (1.772 x 0.787 x 2.953 inch)
Weight	Non-Clutch Type : 170g (±10%)
Housing	Rugged Aluminum Alloy With Hardcoat Anodizing (MIL-A-8625 Type III)
Gear Reduction	5 Hardened Steel Gears
Bearing	3 Ball Bearing & 6 Needle Bearing & 1 Thrust Bearing
Horn Gear Spline	Square 6.5 x 6.5
Gear Train Backlash	< 0.5°
Slip Clutch Release Momentum	N/A
Radial Load On Output Shaft	<764.92N (78.0kgf)
Push Load On Output Shaft	<1,570N (160kgf)

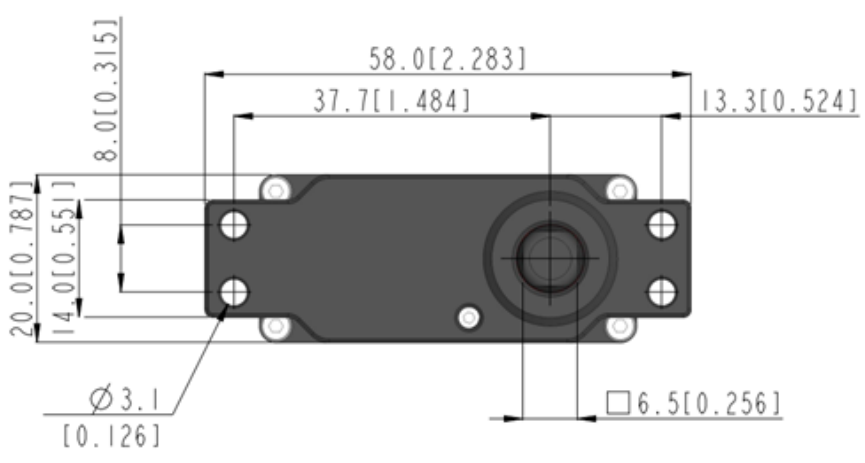
3 Connector

Connector Type	Circular												
Manufacturer	Shenzhen Signal Electronics Co., Ltd												
Connector	M8 B-coding 5 Pins Female Panel Mount With Wires(Front fastened) / 080205-04-004												
Wire	N/A												
Mating	M8 B-coding 5pins Male Assembly Connector, etc.												
Pin Assignment		<table border="1"> <tr> <td>1.</td> <td>Gnd</td> </tr> <tr> <td>2.</td> <td>Vcc</td> </tr> <tr> <td>3.</td> <td>Can-High</td> </tr> <tr> <td>4.</td> <td>Can-Low</td> </tr> <tr> <td>5.</td> <td>Case Gnd</td> </tr> </table>	1.	Gnd	2.	Vcc	3.	Can-High	4.	Can-Low	5.	Case Gnd	
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4 Environmental Specifications

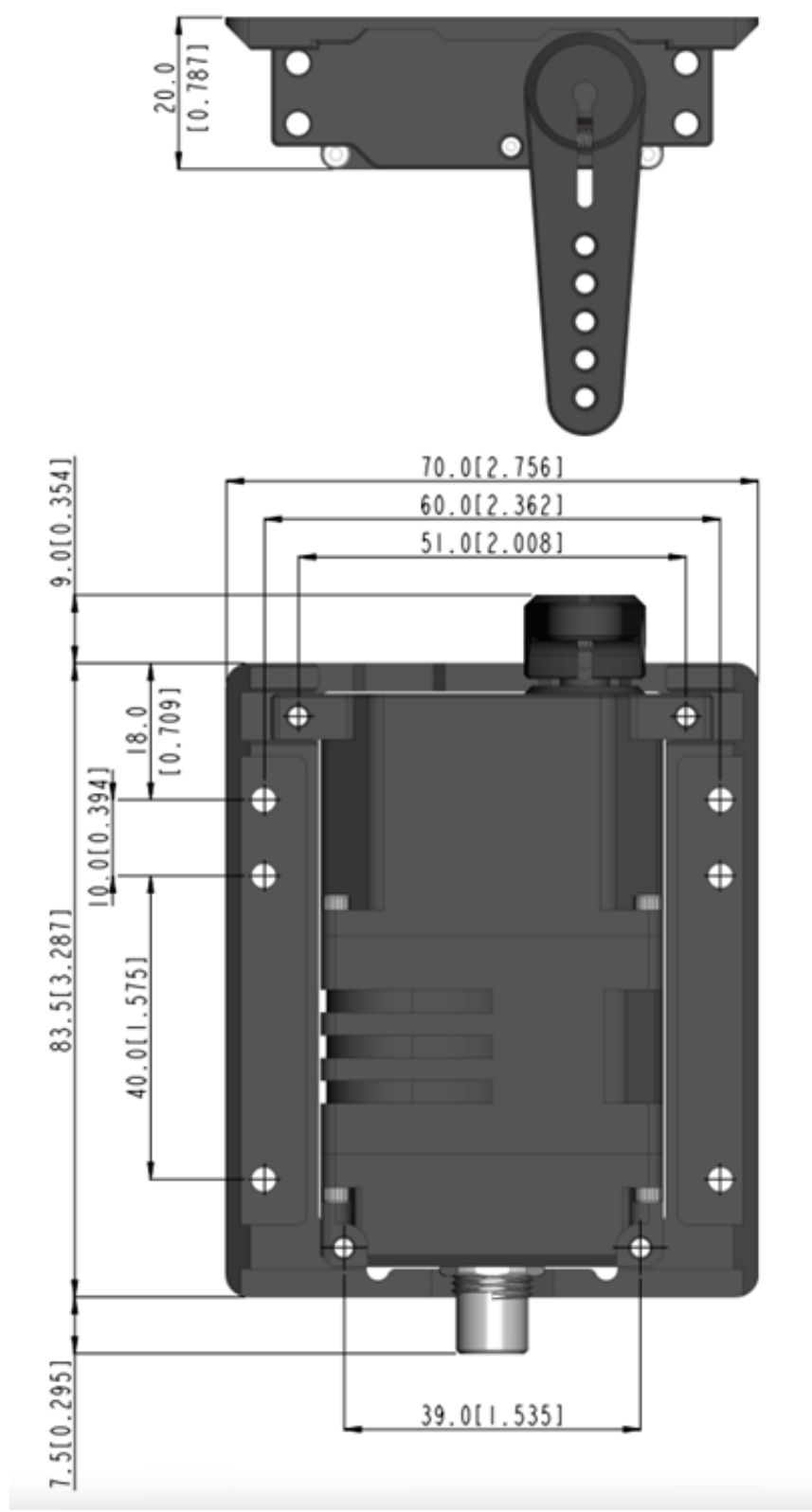
Operation Temperature	-30°C (-22°F)	MIL-STD-810G Method 502.5
	+70°C (+158°F)	MIL-STD-810G Method 501.5
Storage Temperature	-40°C (-40°F)	MIL-STD-810G Method 502.5
	+80°C (+176°F)	MIL-STD-810G Method 501.5
Humidity	95% @35°C ~ 60°C @300hours	MIL-STD-810G Method 507.5
IP-Rating	IP68	IEC 60529
Vibration	Orthogonal axes : ±X , ±Y, ±Z from 50 ~ 500Hz Duration : sweep 5min Acceleration 30G Displacement : 5mm	MIL-STD-810G 514.6C-VII EN 60068-2-6
Mechanical Shock	Procedure 1 - Functional shock 20g, 11ms, Sawtooth Waveform	MIL-STD-810G 516.6
EMC	EN 61000-4-2 EN 61000-4-3 EN 55016-2-1 EN 55016-2-3	EN 61000-6-2:2005+Cor.:2005 EN 61000-6-3:2007+A1:2011
MTTF	>1,000h	Test Condition Load : 20% of Max Torque 0.5Hz sweep(±60)

5 Dimensions



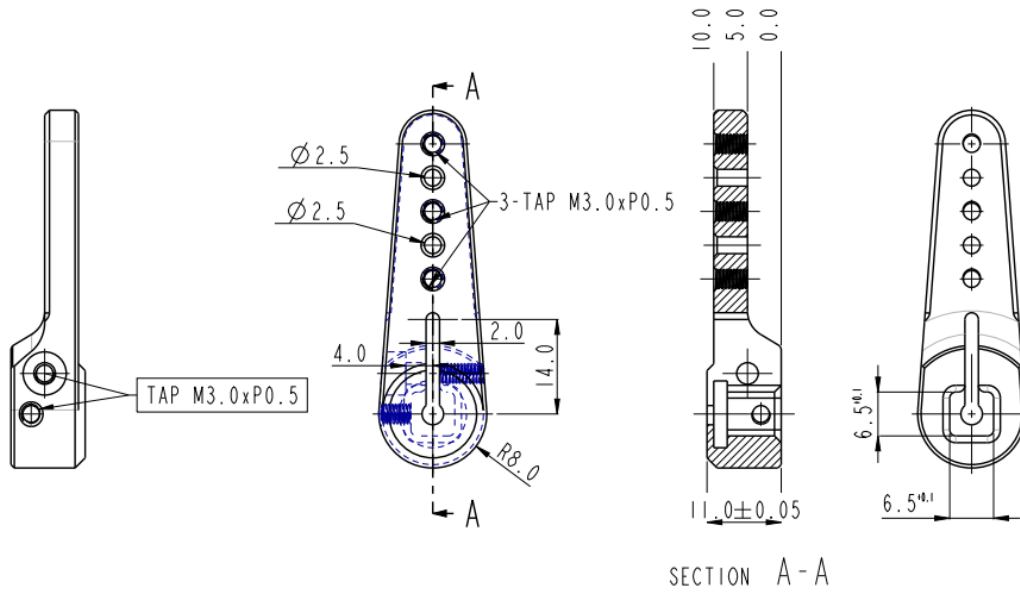
unit : mm [inch]

6 Dimensions– With Tray

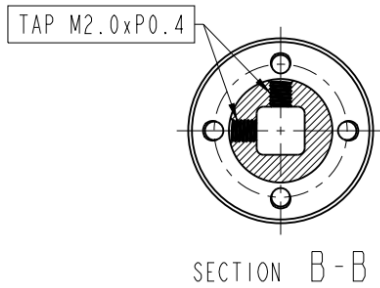
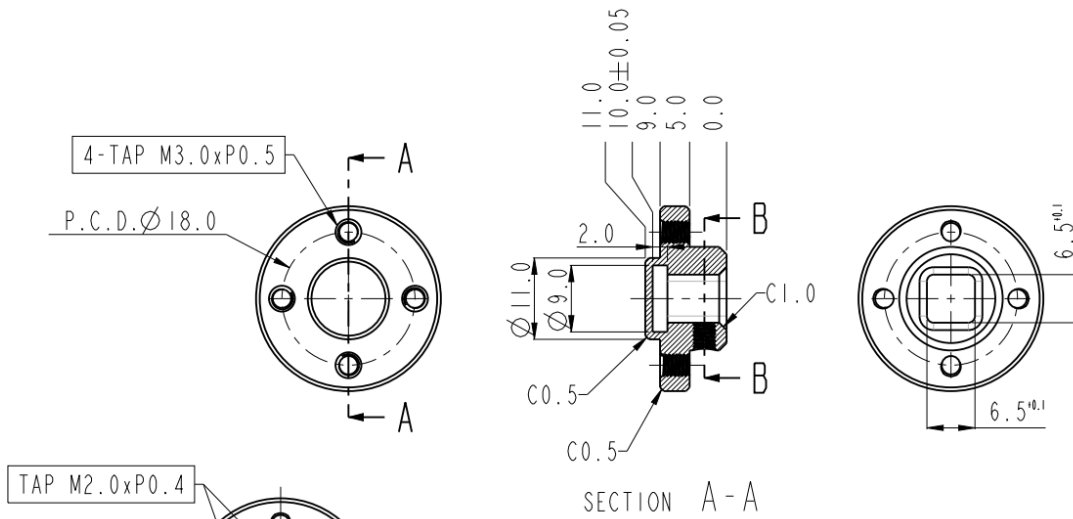


unit : mm [inch]

7 Dimensions – Accessory



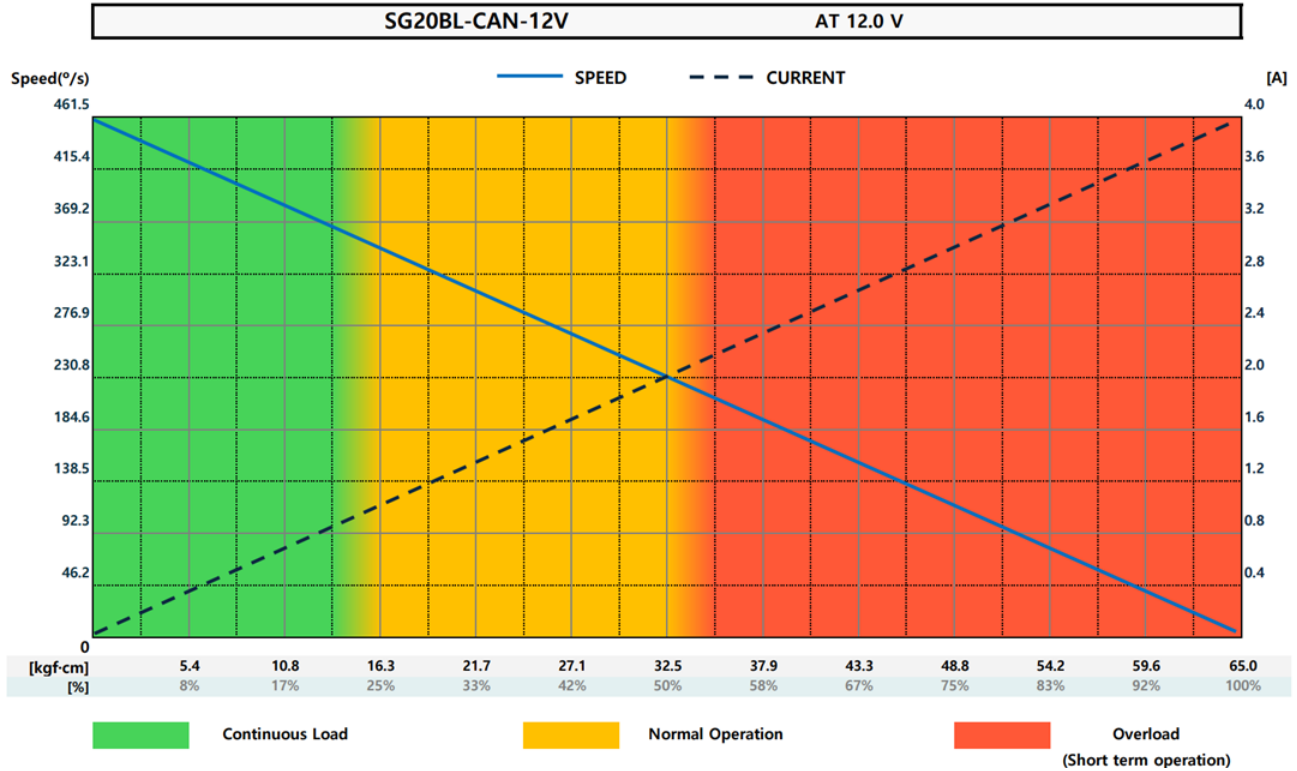
unit : mm



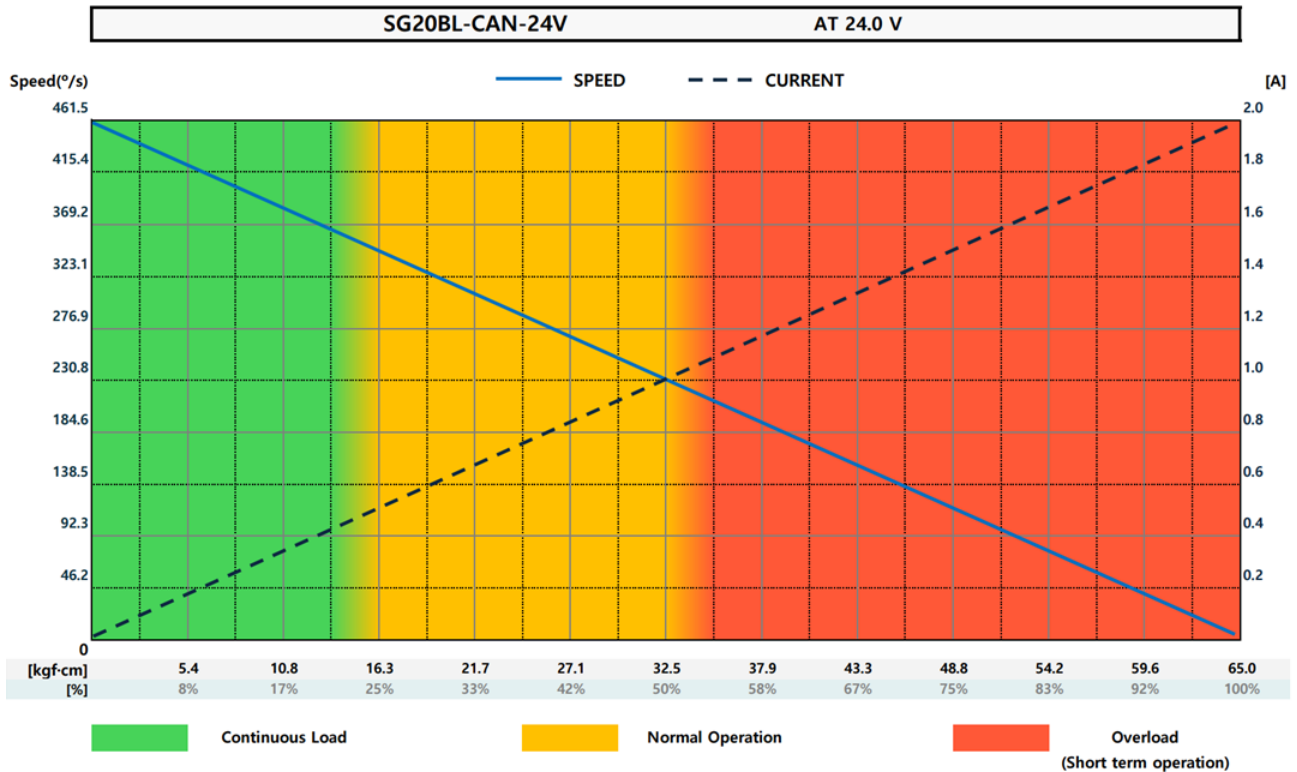
unit : mm

8 Performance Graph

Ver 2.0



Ver 2.0



9 Changes

Data	Version	Updates
2023-01	2.00	-
2023-02	2.01	Fix wording and image errors
2023-04	2.02	Separate the model into 12V and 24V.
2023-11	2.03	Modify the image by changing the mount. Fix Mechanical Features value error.
2023-11	2.04	Add information about anodizing to Housing. Fix document formatting errors.
2024-01	2.05	Add text regarding References.
2024-03	2.06	Fixed the connector pin map.
2025-01	2.07	Changed the phrase 'Able' to 'Enabled' and fixed a typo.
2025-03	2.08	Change the performance graph format.

REFERENCES

- ✓ For the protocol manuals of CAN, DroneCAN, RS485 and TTL, please contact Hitec RCD Korea.
(industrial.sales@hitecrd.net)
- ✓ If you would like to purchase additional industrial servos, please contact Hitec Network or local Hitec distributors in your place.
(<https://hitecrd.com/contact-us/international-distributors>)
- ✓ This product should not be used directly on the human body for medical purposes.
- ✓ This product should not be used for war weapons.
- ✓ All specifications are subject to change without notice.
- ✓ Be careful as strong magnetic fields may cause malfunction of the product.

