

Manufactured with
hitecnology



SG33BL

Engineered and Manufactured in South Korea

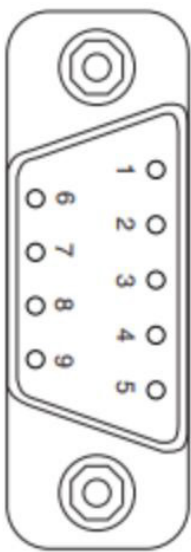
1 Performance Specification

Model	SG33BL-S-12V	SG33BL-T-12V	SG33BL-S-24V	SG33BL-T-24V
Control System	PWN / RS485 / TTL(Half Duplex)			
Position Type	Contactless Magnetic Encoder			
Motor Type	BLDC Motor			
Operating Voltage Range	9.0V ~ 15.0V		22.0V ~ 26.0V	
sVoltage	At 12.0V		At 24.0V	
No Load Speed	400.0 °/sec	324 °/sec	400.0 °/sec	324 °/sec
	0.15 sec/60°	0.185 sec/60°	0.15 sec/60°	0.185 sec/60°
	66.67 RPM	54.05 RPM	66.67 RPM	54.05 RPM
Rated Torque (At – 20% Load)	2.15 N·m (22.0 kgf·cm)	2.88 N·m (29.4 kgf·cm)	2.15 N·m (22.0 kgf·cm)	2.88 N·m (29.4 kgf·cm)
Peak Torque	10.78 N·m (110.0 kgf·cm)	14.41 N·m (147.0 kgf·cm)	10.78 N·m (110.0 kgf·cm)	14.41 N·m (147.0 kgf·cm)
Idle Current (At Stopped)	30mA		20mA	
Running Current (At No Load)	500mA		230mA	
Peak Current	10,000mA		6,400mA	
Operating Travel	Default : ±60° / Programmable : ±160°			
Multi-Turn	±8 Turn (±2880°)			
Continuous Mode	Able			
Temperature Sensing	Able (MCU, Motor)			
Voltage Sensing	Able			
Current Sensing	N/A			
Humidity Sensing	Able			
Servo Amplifier Type	32bit Programmable Digital			
Other Features	Analog Positon Feedback			

2 Mechanical Features

Dimensions	64.0 x 33.0 x 95.0 mm (±0.2mm) / (2.520 x 1.299 x 3.740 inch)
Weight	480.0g (16.93oz)
Housing	Rugged Aluminum Alloy
Gear Reduction	4 Hardened Steel Gears
Bearing	6 Ball Bearing & 2 Needle 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	< 1441N (147.0 kgf)
Push Load On Output Shaft	N/A

3 Connector

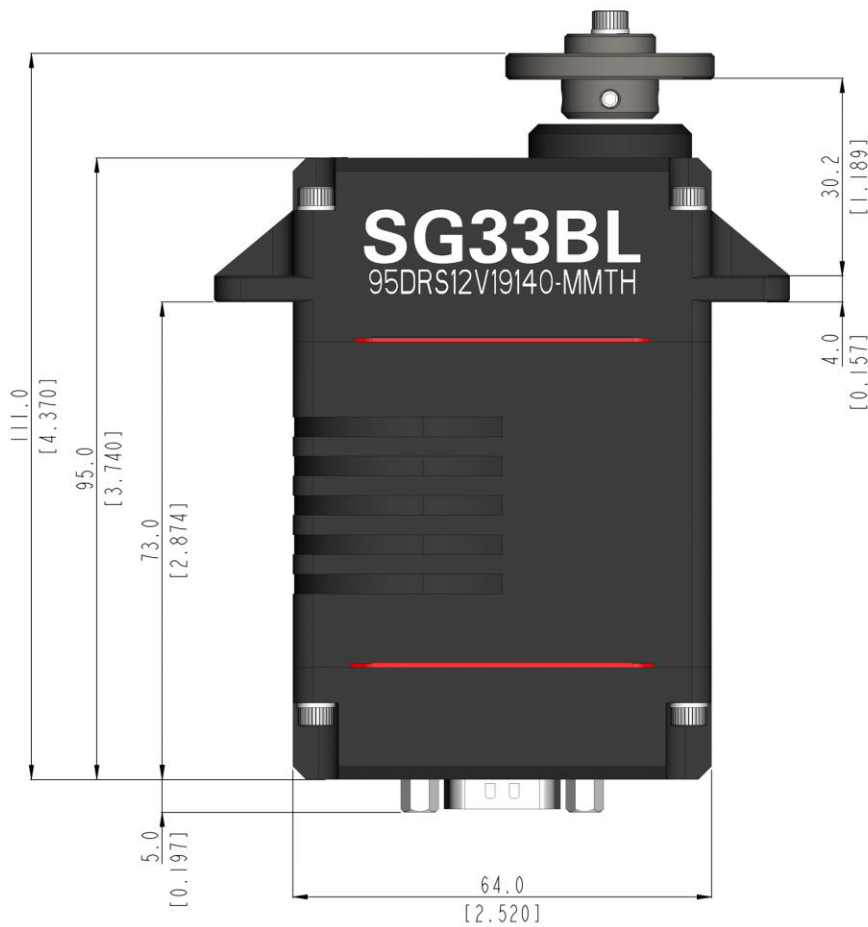
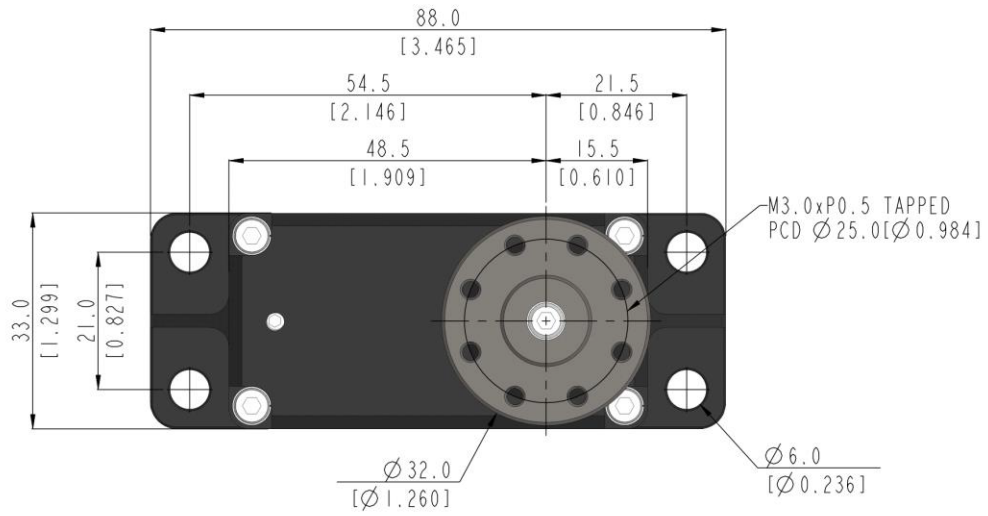
Manufacturer	Shenzhen Signal Electronics Co.,Ltd		
Type	D-sub 9 Male Connector		
Mating	D-sub 9 Female Assembly Connector, etc.		
Pin Assignment		1.	RS485 A
		2.	RS485 B
		3.	Analog Feed back (+)
		4.	PWM/TTL
		5.	Case Gnd
		6.	Vcc
		7.	Gnd
		8.	Not connected
		9.	Analog Feed back (-)

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 : $\pm X$, $\pm Y$, $\pm Z$ 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)

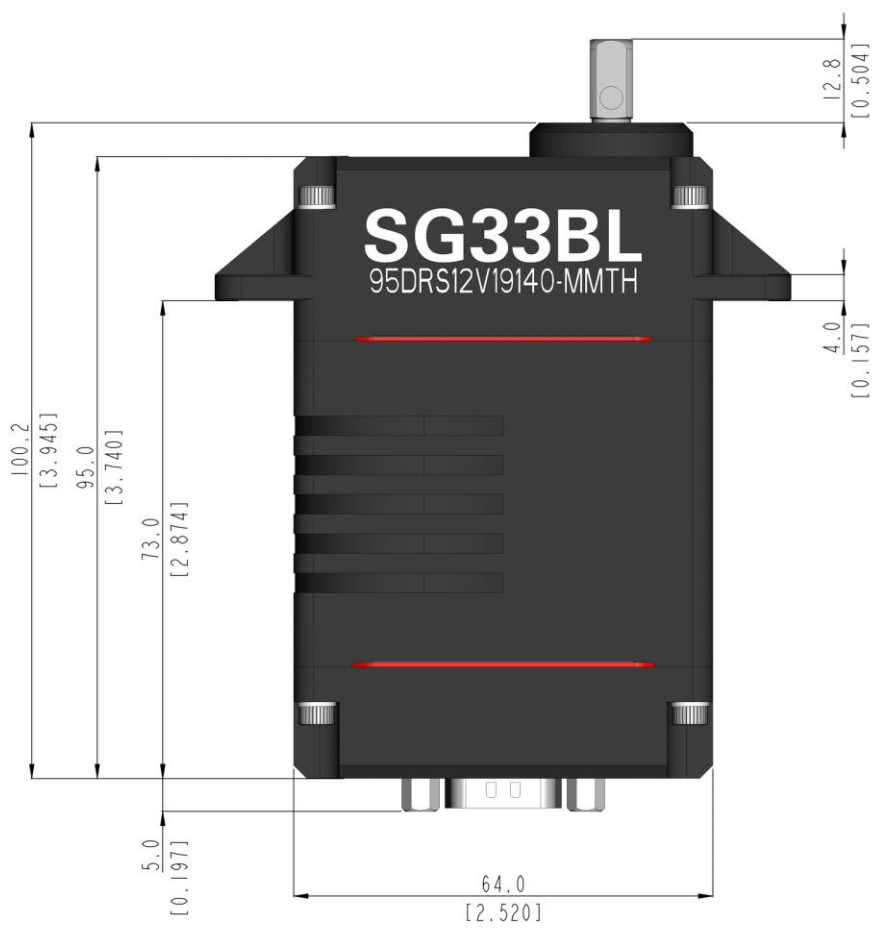
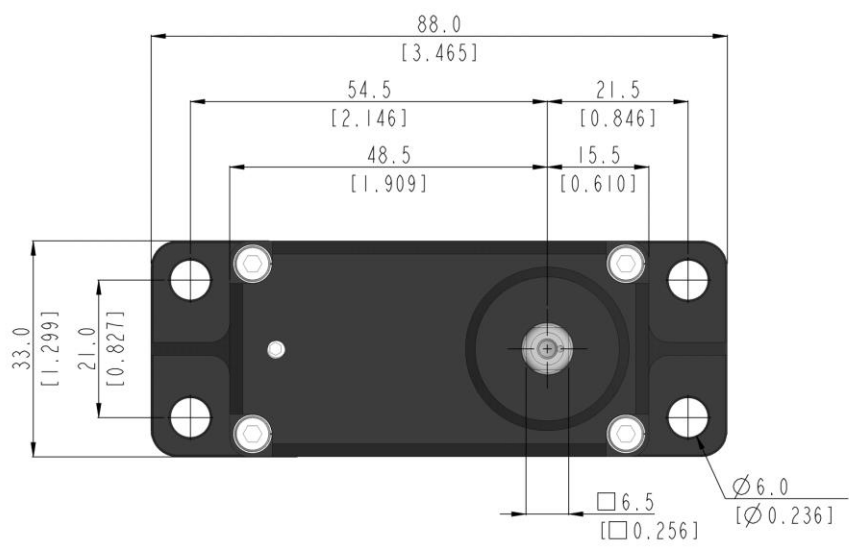
5 Dimensions

5-1 With Horn



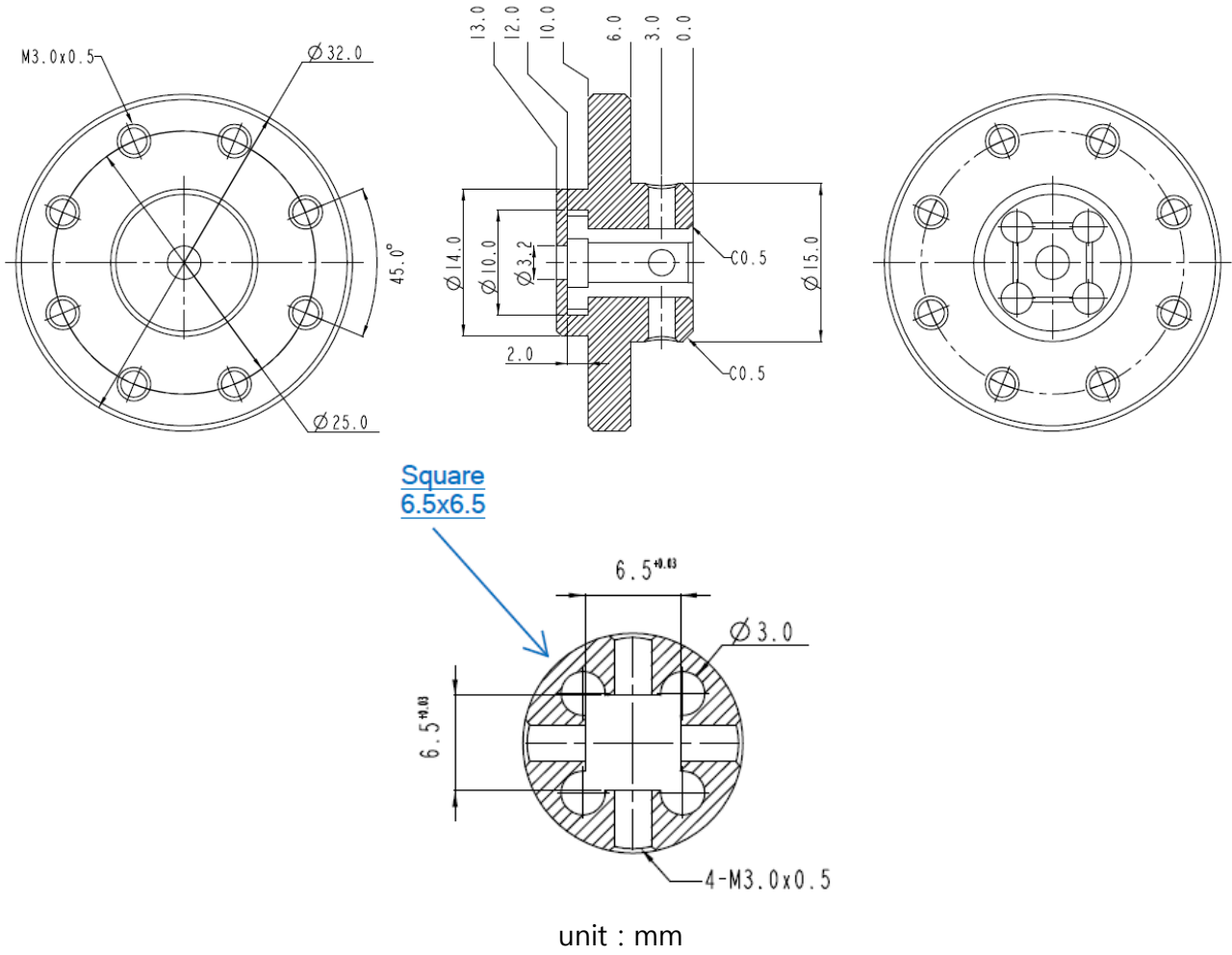
unit : mm [inch]

5-2 Without Horn

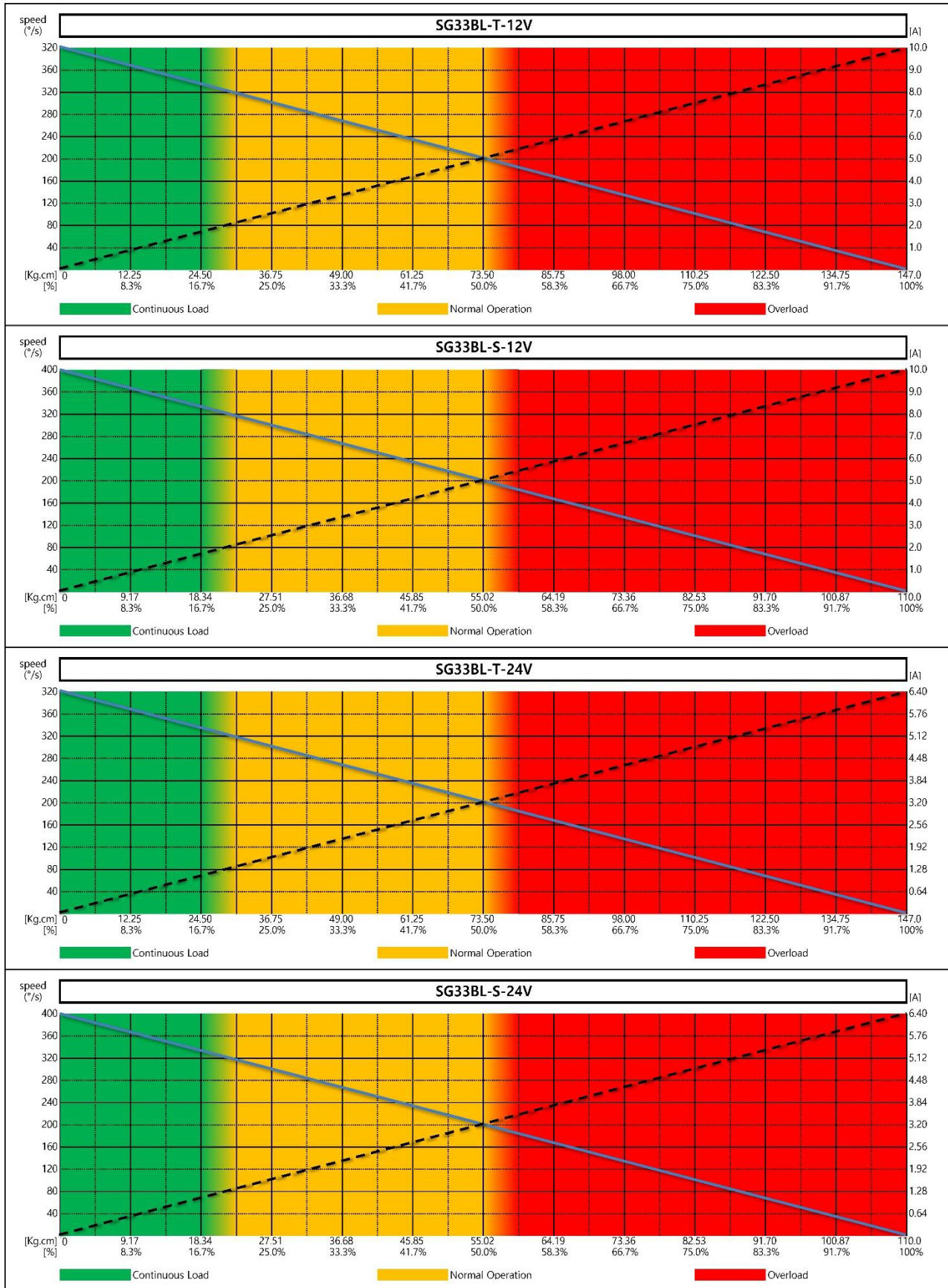


unit : mm [inch]

6 Dimensions – Accessory



7 Performance Graph



8 Changes

Data	Version	Updates
2023-06	2.00	-

REFERENCES

- ✓ For the protocol manuals of CAN, DroneCAN, RS485 and TTL, please contact Hitec Commercial Solutions: Support@HitecGroupUSA.com
- ✓ If you would like to purchase additional industrial servos, please contact Hitec Commercial Solutions Sales Staff: <https://www.hiteccs.com/contact-us>

