

Manufactured with
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SG33BL-SW

Engineered and Manufactured in South Korea

1 Performance Specification

Model	SG33BL-SW-T-12V	SG33BL-SW-T-24V
Control System	PWM / TTL(Half Duplex)	
Position Type	Contactless Magnetic Encoder	
Motor Type	BLDC Motor	
Operating Voltage Range	9.0V ~ 15.0V	18.0V ~ 32.0V
aVoltage	At 12.0V	At 24.0V
No Load Speed	324 °/sec	
	0.185 sec/60°	
	54.05 RPM	
Rated Torque (At 20% Load)	2.88 N·m (29.4 kgf·cm)	
Peak Torque	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	Enabled	
Temperature Sensing	Enabled (MCU, Motor)	
Voltage Sensing	Enabled	
Current Sensing	N/A	
Humidity Sensing	Enabled	
Servo Amplifier Type	32bit Programmable Digital	
Analog Position Feedback	Enabled	

2 Mechanical Features

Connector Type	Circular Connector
Dimensions	64.0 x 33.0 x 90.0 mm (±0.2mm) / (2.520 x 1.299 x 3.543 inch)
Weight	515.0g (18.17oz)
Housing	Rugged Aluminum Alloy With Hardcoat Anodizing (MIL-A-8625 Type III)
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	< 1729N (176.32kgf)
Push Load On Output Shaft	N/A

3 Connector

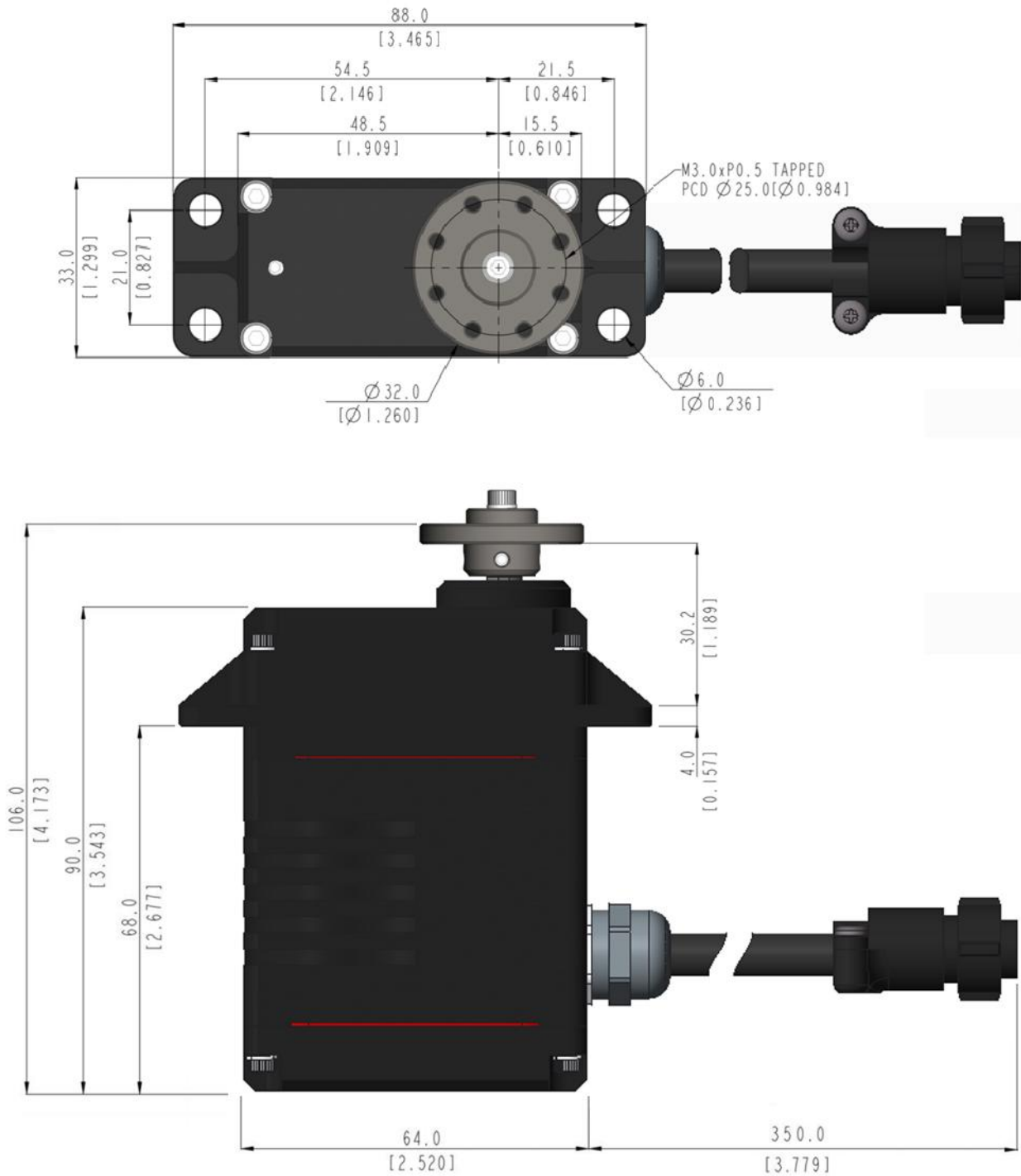
Connector Type	Circular Connector		
Manufacture	TE Connectivity/DEUTSCH		
Connector	IMC26-2007X		
Wire	350mm / 20AWG		
Mating	IMC21-2007X		
Pin Assignment		1.	VCC
		2.	GND
		3.	N/C
		4.	Feedback-
		5.	PWM/TTL
		6.	Feedback+
		7.	N/C

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 (±60)

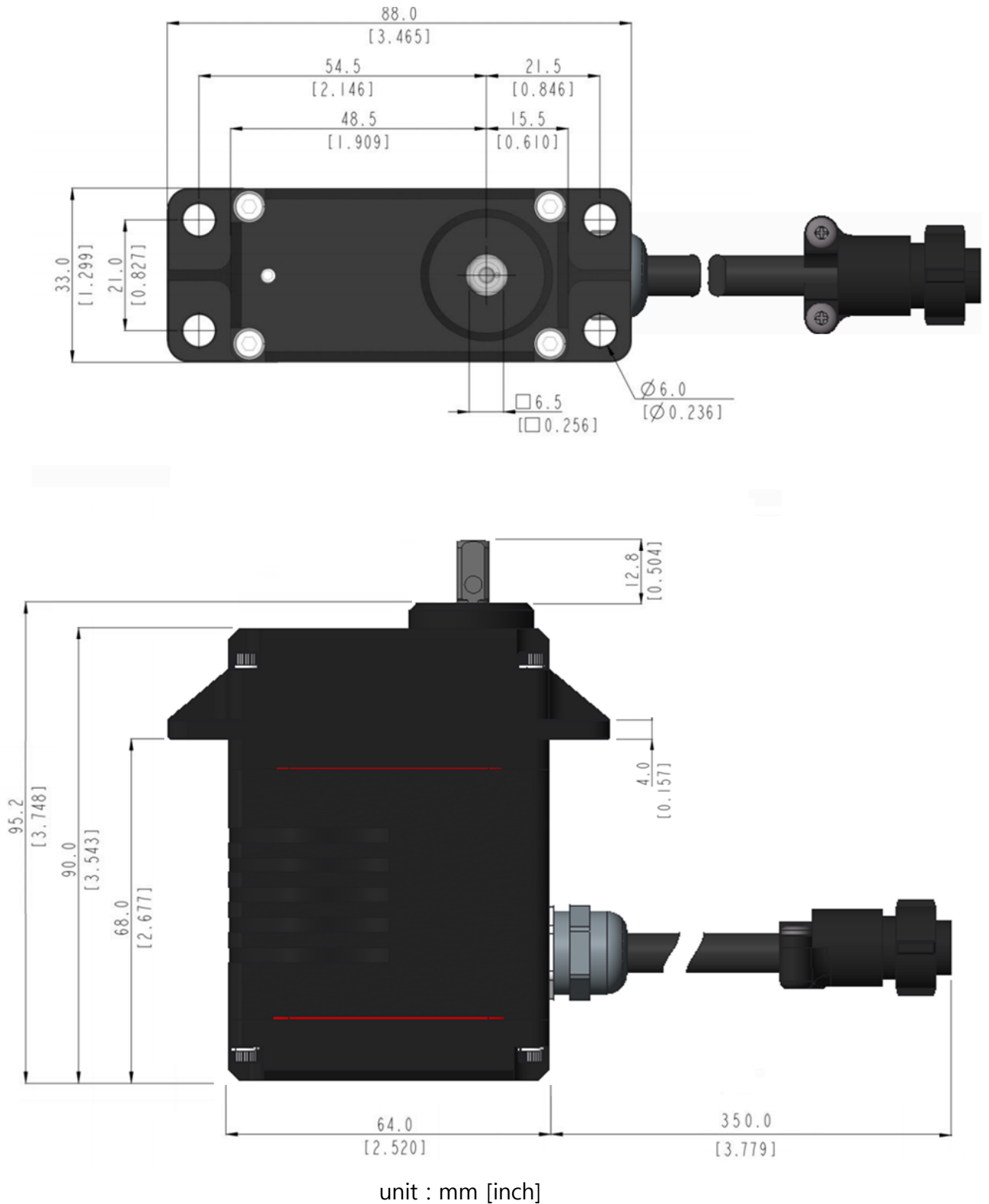
5 Dimensions

5-1 With Horn

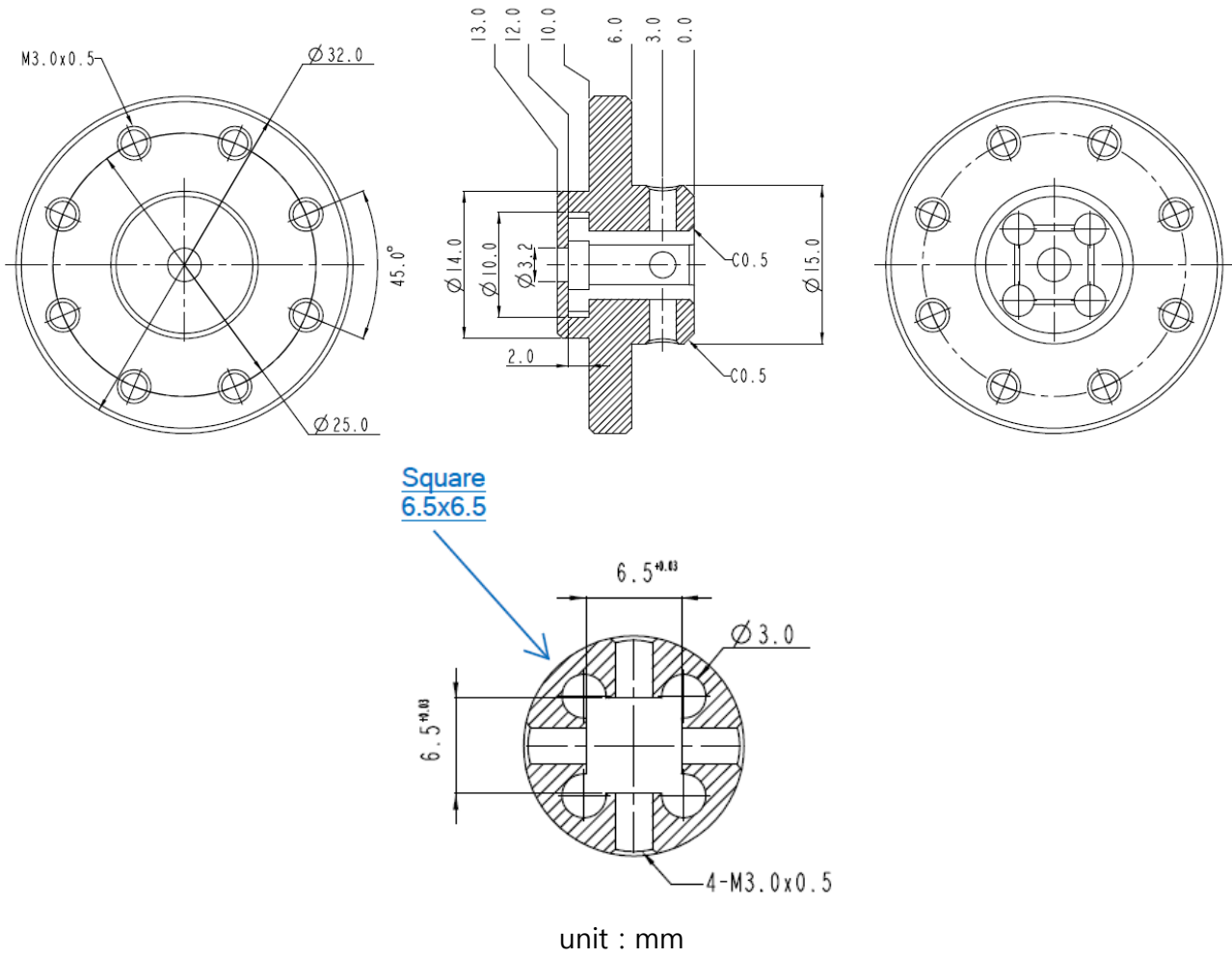


unit : mm [inch]

5-2 Without Horn

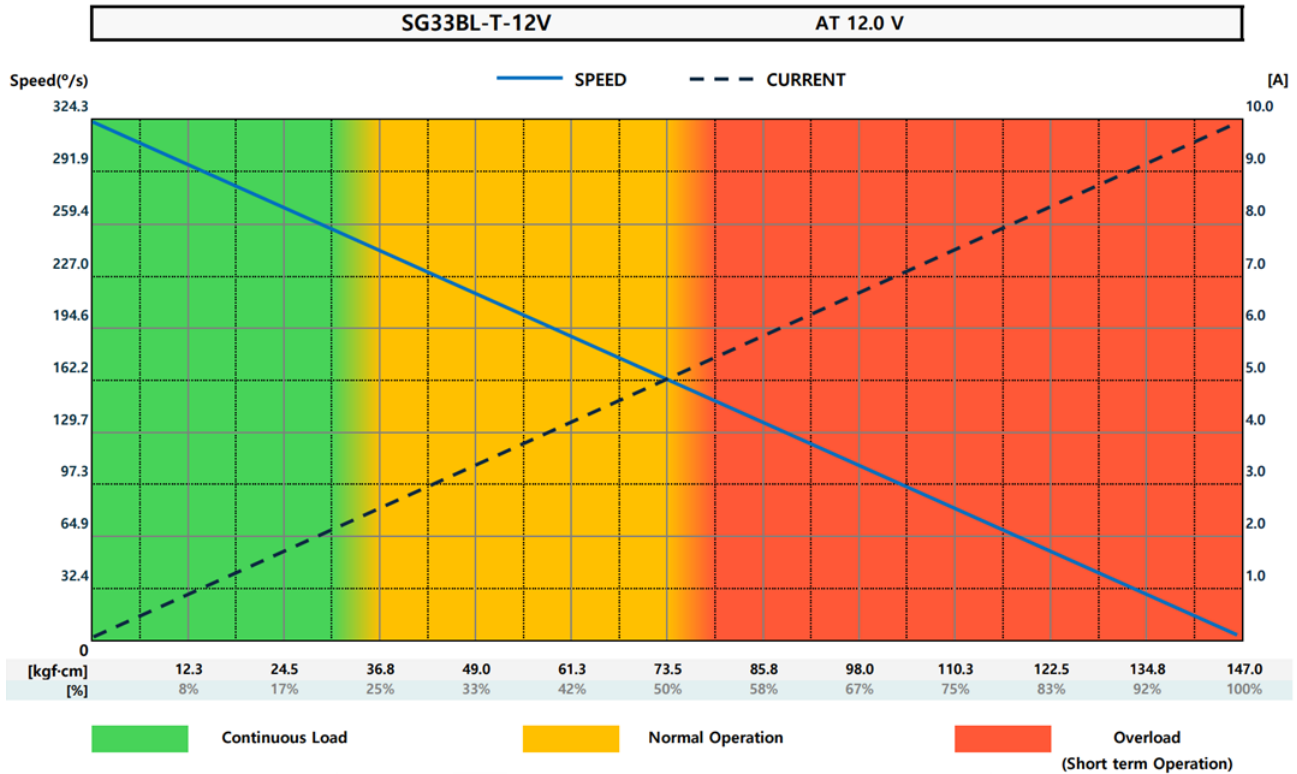


6 Dimensions – Accessory

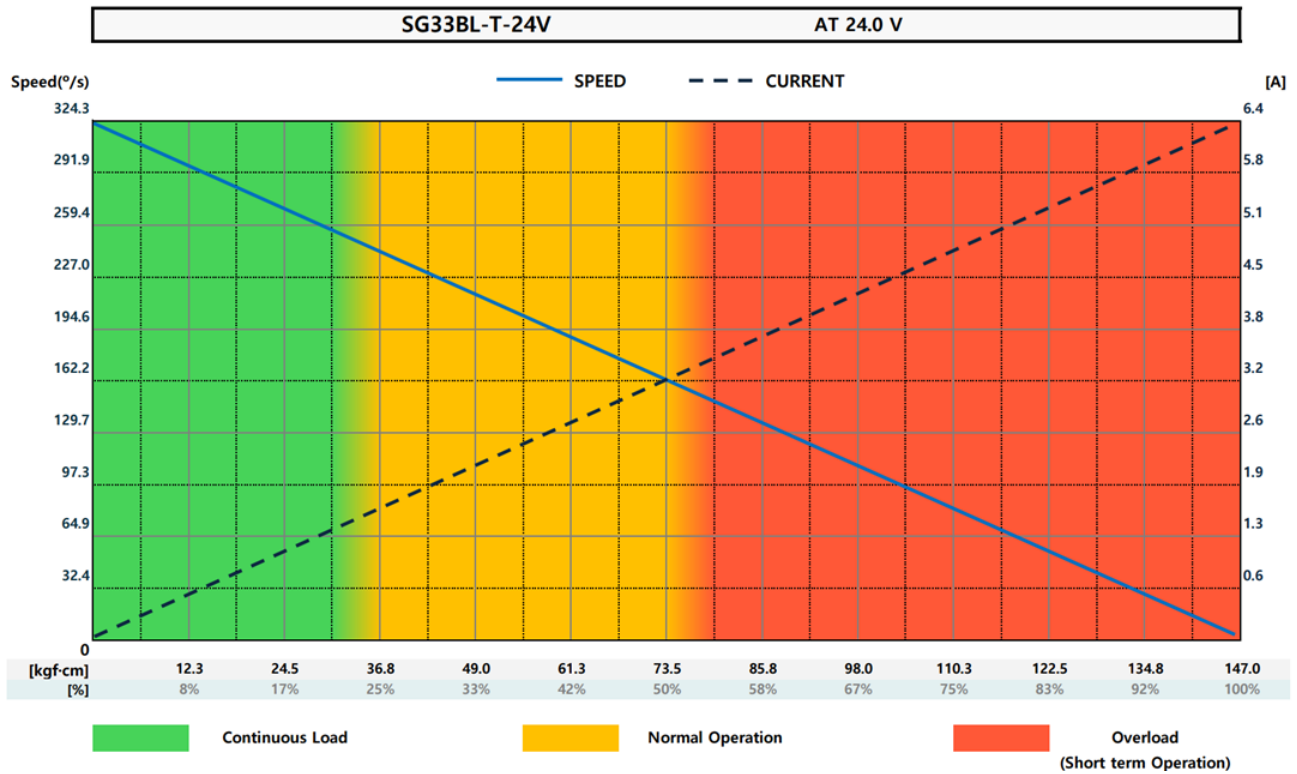


7 Performance Graph

Ver 2.0



Ver 2.0



8 Changes

Data	Version	Updates
2025-05	2.00	-

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.

