

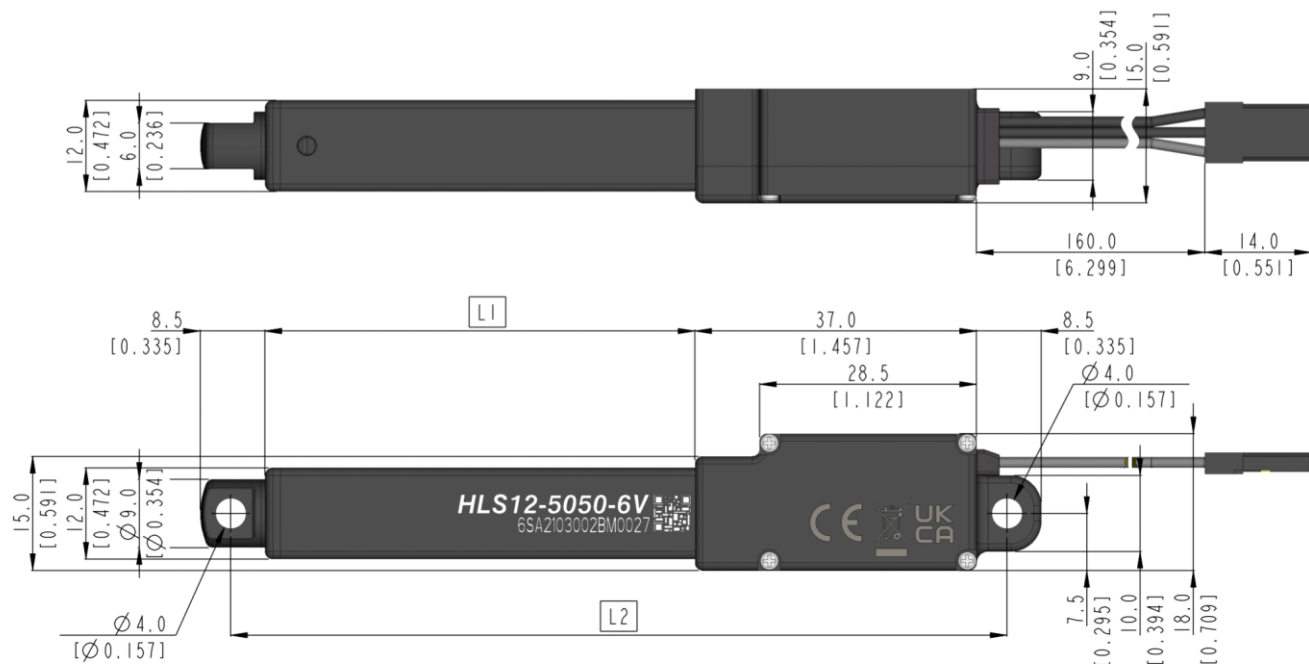
HLS12 (4.8V) General Specification.

Control System	PWM												At the Max voltage, it is recommended to be used only for a short time duration.	
Lead Screw	LEAD 5mm													
Motor Type	Cored Metal Brush													
Operating Voltage Range	4.0 ~ 8.4V													
Voltage	4.8V													
Gear Ratio	50:1			100:1			210:1			380:1				
No Load	Speed	20.0mm/s			10.4mm/s			4.9mm/s			2.6mm/s			
	Current	80mA												
Load Spec	Load	Speed	Current	Load	Speed	Current	Load	Speed	Current	Load	Speed	Current		
Maximum Efficiency Point	0.8kgf (7.85N)	15.2mm/s	160mA	1.4kgf (13.34N)	8.2mm/s	160mA	2.9kgf (28.24N)	3.6mm/s	160mA	5.2kgf (50.99N)	2.0mm/s	160mA		
Peak Power Point	1.4kgf (13.34N)	11.2mm/s	240mA	2.5kgf (24.32N)	5.6mm/s	240mA	5.0kgf (48.64N)	2.6mm/s	240mA	8.0kgf (78.45N)	1.5mm/s	240mA		
Max Force (Lifted)	1.8kgf (17.26N)	5.3mm/s	320mA	3.4kgf (32.95N)	2.6mm/s	320mA	6.4kgf (62.76N)	1.8mm/s	320mA	9.6kgf (94.14N)	1.0mm/s	320mA		
Stall Force	2.0kgf (19.61N)			4.0kgf (39.23N)			8.0kgf (78.45N)			14.4kgf (141.22N)				
Stall Current	400mA													
Max Static Force	16.32kgf (160N) (above)													
Stroke SPEC	30mm			50mm			100mm							
Repeatability	±0.2mm			±0.3mm			±0.5mm							
Max Side Load (Extended)	4.08kgf (40N)			3.06kgf (30N)			1.53kgf (15N)							
Outline Dimensions	82.0mm x 15.0mm x 18.0mm (3.228inch x 0.591inch x 0.709inch)			102.0mm x 15.0mm x 18.0mm (4.016inch x 0.591inch x 0.709inch)			152.0mm x 15.0mm x 18.0mm (5.984inch x 0.591inch x 0.709inch)			General Tolerance ±0.1mm				
Weight	34g (1.199oz)			40g(1.411oz)			56g (1.975oz)			Excluding the weight of Horn				
Operating Temperature Range	-10°C ~ +50°C(+14°F ~ +122°F)													
Storage Temperature Range	-30°C ~ +80°C (-22°F ~ +176°F)													
Connector Wire Length	160mm(6.294inch)													
Connector Wire Gauge	24AWG													
Bearing Type	Flange bearing													
Case Material	Engineering Plastic & Aluminum Pipe													
Gear Material	4 Metal Gears													
IP-Rating	IP4X													
Servo Amplifier Type	32bit programmable Digital													



HLS12-XXXX-XX [EX, HLS12-5050-6V]
 └── VOLTAGE OPTION
 └── GEARING OPTION
 └── STROKE OPTION

	L1	L2
HLS12-30-XX	36.5 [1.437]	82.0 [3.228]
HLS12-50-XX	56.5 [2.224]	102.0 [4.016]
HLS12-100-XX	106.5 [4.193]	152.0 [5.984]



1:1 scale (Unit : mm[inch])

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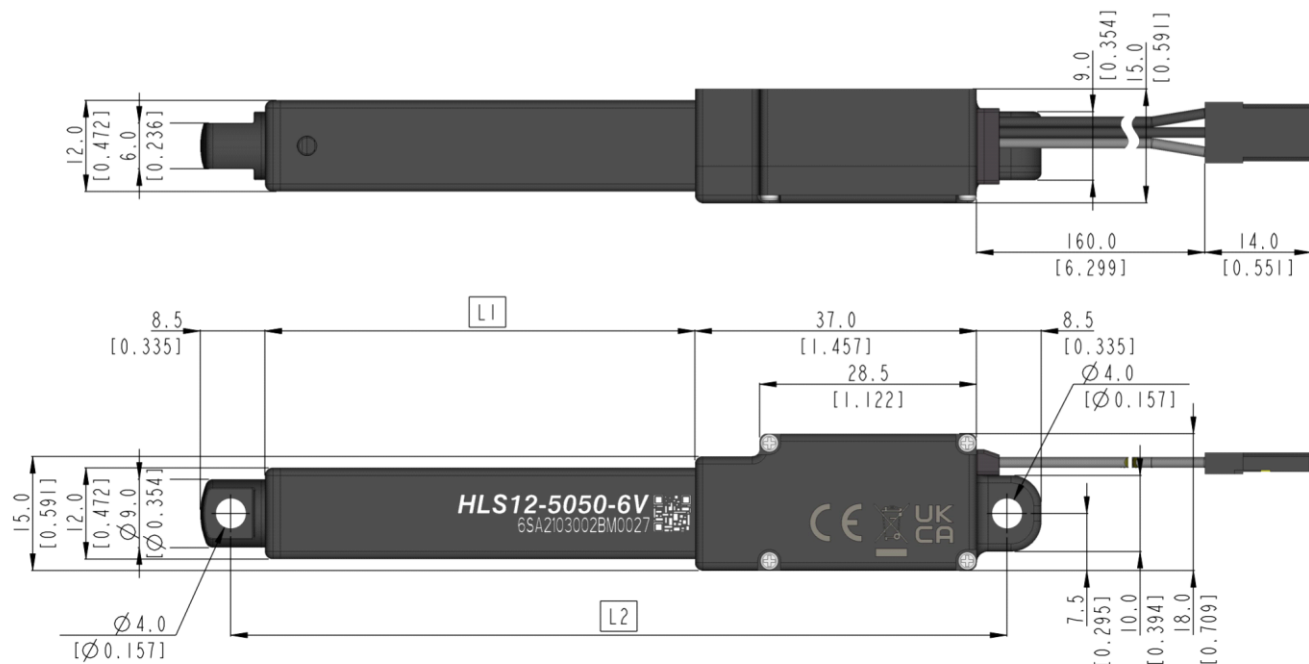
HLS12 (6V) General Specification.

Control System	PWM												At the Max voltage, it is recommended to be used only for a short time duration.	
Lead Screw	LEAD 5mm													
Motor Type	Cored Metal Brush													
Operating Voltage Range	4.0 ~ 8.4V													
Voltage	6.0V													
Gear Ratio	50:1			100:1			210:1			380:1				
No Load	Speed	25.0mm/s			13.0mm/s			6.1mm/s			3.3mm/s			
	Current	100mA												
Load Spec	Load	Speed	Current	Load	Speed	Current	Load	Speed	Current	Load	Speed	Current		
Maximum Efficiency Point	1.0kgf (9.81N)	19.0mm/s	200mA	1.7kgf (16.67N)	10.3mm/s	200mA	3.6kgf (35.30N)	4.5mm/s	200mA	6.5kgf (63.74N)	2.5mm/s	200mA		
Peak Power Point	1.7kgf (16.67N)	14.0mm/s	300mA	3.1kgf (30.40N)	7.0mm/s	300mA	6.2kgf (60.80N)	3.2mm/s	300mA	10.0kgf (98.07N)	1.9mm/s	300mA		
Max Force (Lifted)	2.2kgf (21.57N)	6.7mm/s	400mA	4.2kgf (41.19N)	3.2mm/s	400mA	8.0kgf (78.45N)	2.3mm/s	400mA	12.0kgf (117.68N)	1.2mm/s	400mA		
Stall Force	2.5kgf (24.52N)			5.0kgf (49.03N)			10.0kgf (98.07N)			18.0kgf (176.52N)				
Stall Current	500mA													
Max Static Force	20.39kgf (200N) (above)													
Stroke SPEC	30mm			50mm			100mm			-				
Repeatability	±0.2mm			±0.3mm			±0.5mm			-				
Max Side Load (Extended)	4.08kgf (40N)			3.06kgf (30N)			1.53kgf (15N)			-				
Outline Dimensions	82.0mm x 15.0mm x 18.0mm (3.228inch x 0.591inch x 0.709inch)			102.0mm x 15.0mm x 18.0mm (4.016inch x 0.591inch x 0.709inch)			152.0mm x 15.0mm x 18.0mm (5.984inch x 0.591inch x 0.709inch)			General Tolerance ±0.1mm				
Weight	34g (1.199oz)			40g(1.411oz)			56g (1.975oz)			Excluding the weight of Horn				
Operating Temperature Range	-10°C ~ +50°C(+14°F ~ +122°F)													
Storage Temperature Range	-30°C ~ +80°C (-22°F ~ +176°F)													
Connector Wire Length	160mm(6.294inch)													
Connector Wire Gauge	24AWG													
Bearing Type	Flange bearing													
Case Material	Engineering Plastic & Aluminum Pipe													
Gear Material	4 Metal Gears													
IP-Rating	IP4X													
Servo Amplifier Type	32bit programmable Digital													



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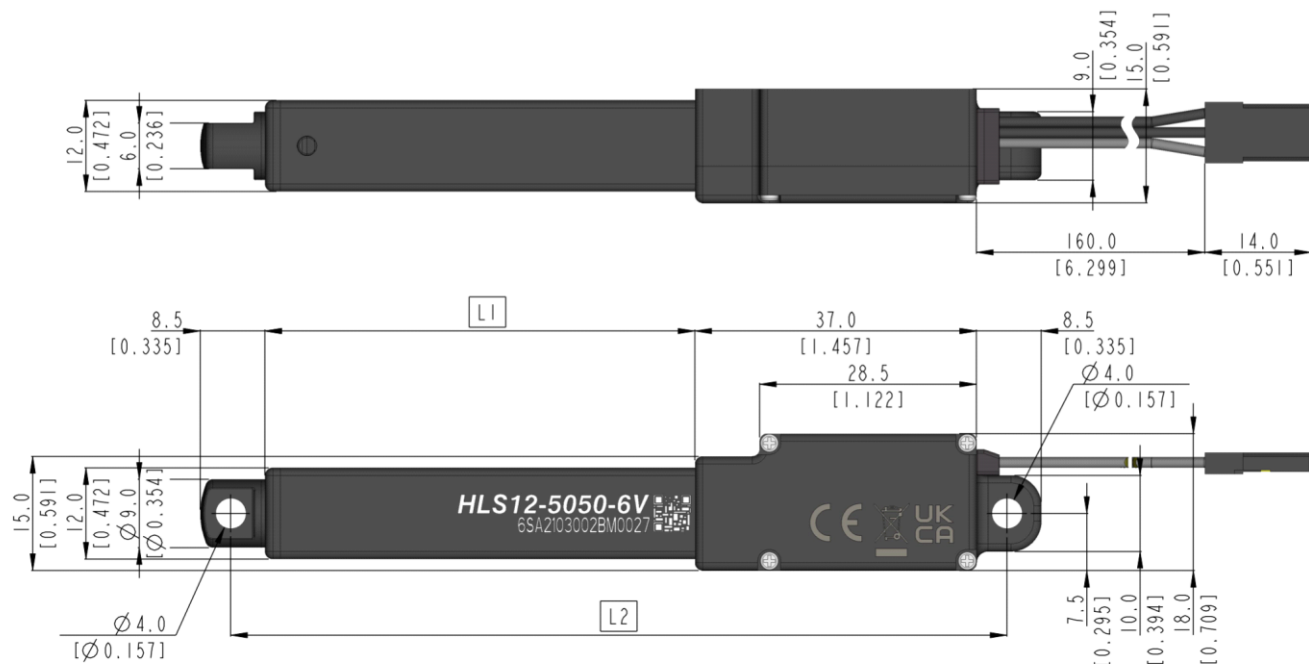
HLS12 (7.4V) General Specification.

Control System	PWM												At the Max voltage, it is recommended to be used only for a short time duration.	
Lead Screw	LEAD 5mm													
Motor Type	Cored Metal Brush													
Operating Voltage Range	4.0 ~ 8.4V													
Voltage	7.4V													
Gear Ratio	50:1			100:1			210:1			380:1				
No Load	Speed	30.9mm/s			16.1mm/s			7.5mm/s			4.1mm/s			
	Current	130mA												
Load Spec	Load	Speed	Current	Load	Speed	Current	Load	Speed	Current	Load	Speed	Current		
Maximum Efficiency Point	1.2kgf (12.11N)	23.5mm/s	250mA	2.1kgf (20.59N)	12.7mm/s	250mA	4.4kgf (43.60N)	5.6mm/s	250mA	8.0kgf (78.72N)	3.1mm/s	250mA		
Peak Power Point	2.1kgf (20.59N)	17.3mm/s	370mA	3.8kgf (37.54N)	8.6mm/s	370mA	7.7kgf (75.09N)	4.0mm/s	370mA	12.4kgf (121.11N)	2.3mm/s	370mA		
Max Force (Lifted)	2.7kgf (26.64N)	8.2mm/s	490mA	5.2kgf (50.87N)	4.0mm/s	490mA	9.9kgf (96.89N)	2.8mm/s	490mA	14.8kgf (145.33N)	1.5mm/s	490mA		
Stall Force	3.1kgf (30.28N)			6.2kgf (60.56N)			12.4kgf (121.11N)			22.2kgf (218.00N)				
Stall Current	620mA													
Max Static Force	25.19kgf (247N) (above)													
Stroke SPEC	30mm			50mm			100mm							
Repeatability	±0.2mm			±0.3mm			±0.5mm							
Max Side Load (Extended)	4.08kgf (40N)			3.06kgf (30N)			1.53kgf (15N)							
Outline Dimensions	82.0mm x 15.0mm x 18.0mm (3.228inch x 0.591inch x 0.709inch)			102.0mm x 15.0mm x 18.0mm (4.016inch x 0.591inch x 0.709inch)			152.0mm x 15.0mm x 18.0mm (5.984inch x 0.591inch x 0.709inch)			General Tolerance ±0.1mm				
Weight	34g (1.199oz)			40g(1.411oz)			56g(1.975oz)			Excluding the weight of Horn				
Operating Temperature Range	-10°C ~ +50°C(+14°F ~ +122°F)													
Storage Temperature Range	-30°C ~ +80°C (-22°F ~ +176°F)													
Connector Wire Length	160mm(6.294inch)													
Connector Wire Gauge	24AWG													
Bearing Type	Flange bearing													
Case Material	Engineering Plastic & Aluminum Pipe													
Gear Material	4 Metal Gears													
IP-Rating	IP4X													
Servo Amplifier Type	32bit programmable Digital													



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